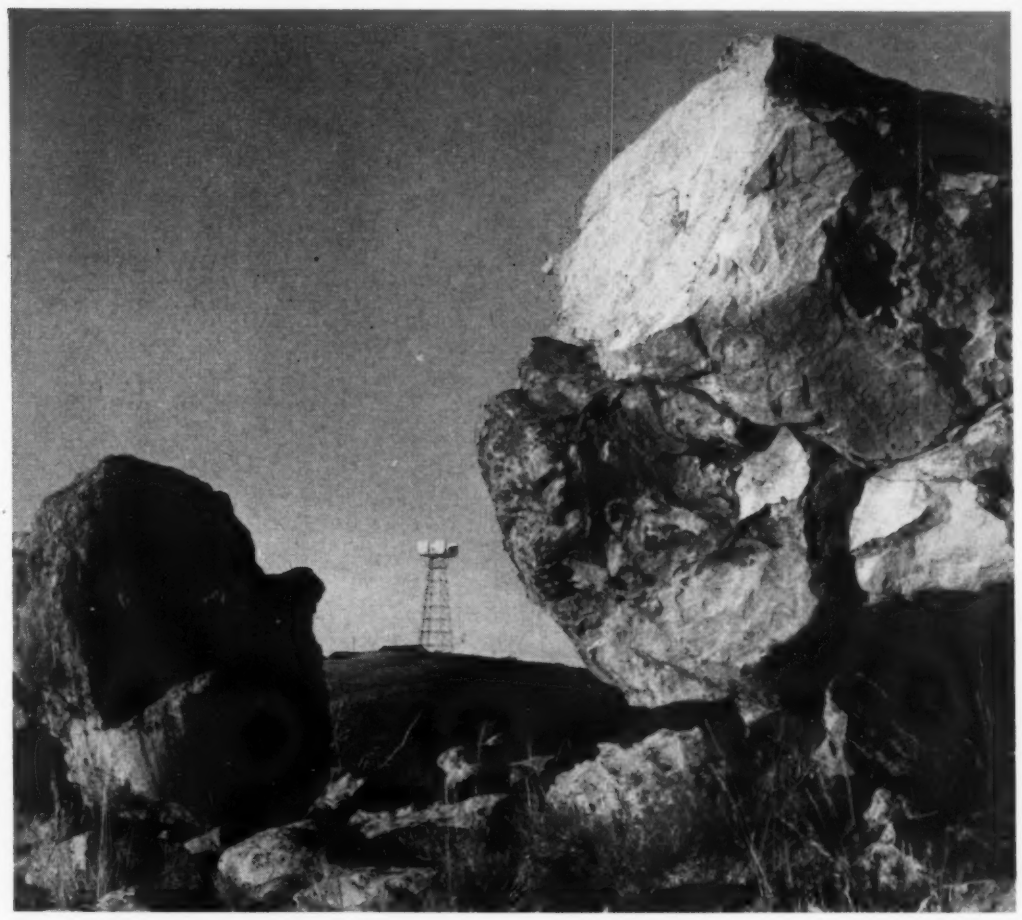
JUNE 23, 1956
VOL. 150—NO. 25

Telephony

THE JOURNAL OF THE TELEPHONE INDUSTRY



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11,283 of Which 10,730 is Paid

THEY DOT THE HORIZON

Microwave radio towers are springing up all over the country as telephone companies adopt the method of speeding the spoken word across the nation. Here is a radio relay tower of the Bell System near Evanston, Wyo.

MANAGEMENT • PLANT • TRAFFIC • COMMERCIAL • LEGAL • ACCOUNTING

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A DIVISION OF GENERAL DYNAMICS CORPORATION

Sales Offices: Atlanta 3, Chicago 6, Kansas City 8, Rochester 3, San Francisco 3.

This is our Hands-Free telephone. It's the most modern loud-speaking instrument yet designed. It's also a rich source of extra revenue to independent companies who promote it. *The Yellow Pages* of your own telephone book will supply the best possible list of prospects.

This is free help, from us, for a springboard in your promotion. A four-page, profusely illustrated brochure on the Hands-Free, written from the subscriber's viewpoint.

FROM THIS MODERN FACTORY COMES TOP QUALITY *Wires & Cables* FOR THE TELEPHONE INDUSTRY

EXCHANGE AREA CABLE

No. 24, 22 and 19 AWG — Soft bare copper, polyethylene insulated, cabled, polyethylene taped, aluminum shielded, polyethylene jacketed. For aerial and duct service.

URBAN DISTRIBUTION WIRE

No. 24 Copper — Color Coded Polyvinyl insulated Conductors cabled around galvanized steel messenger. Available in 16 pairs only. No. U.D.C. - 1619-U.

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No. 22 Bare Copper Tw. Pr. Jacket Overall Brown or Ivory
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JUMPER & SWITCHBOARD WIRES

No. 22 Tin. Copper Tw. Pr. Red and White
No. 22 Tin. Copper Triplex Red-Black-White
No. 19 Tin. Copper Tw. Pr. Red and White
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PVC Insulation and Ripcord Jacket

6 pr. No. 24 B.C. — Overall PVC Jacket O.D. .310
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16 pr. No. 24 B.C. — Overall PVC Jacket O.D. .420
21 pr. No. 24 B.C. — Overall PVC Jacket O.D. .490
26 pr. No. 24 B.C. — Overall PVC Jacket O.D. .520
51 pr. No. 24 B.C. — Overall PVC Jacket O.D. .710
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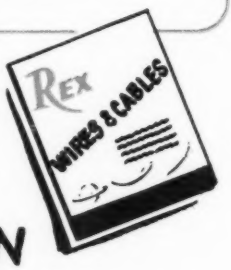
Polyethylene insulated — color coded polyvinyl jacketed conductors. 19 insulated conductors cabled around steel messenger. 3 pr., 6 pr., 11 pr., 16 pr.

Contact us for name of nearest distributor.

SEND FOR TECHNICAL SPECIFICATIONS AND PRICES.



THE REX CORPORATION

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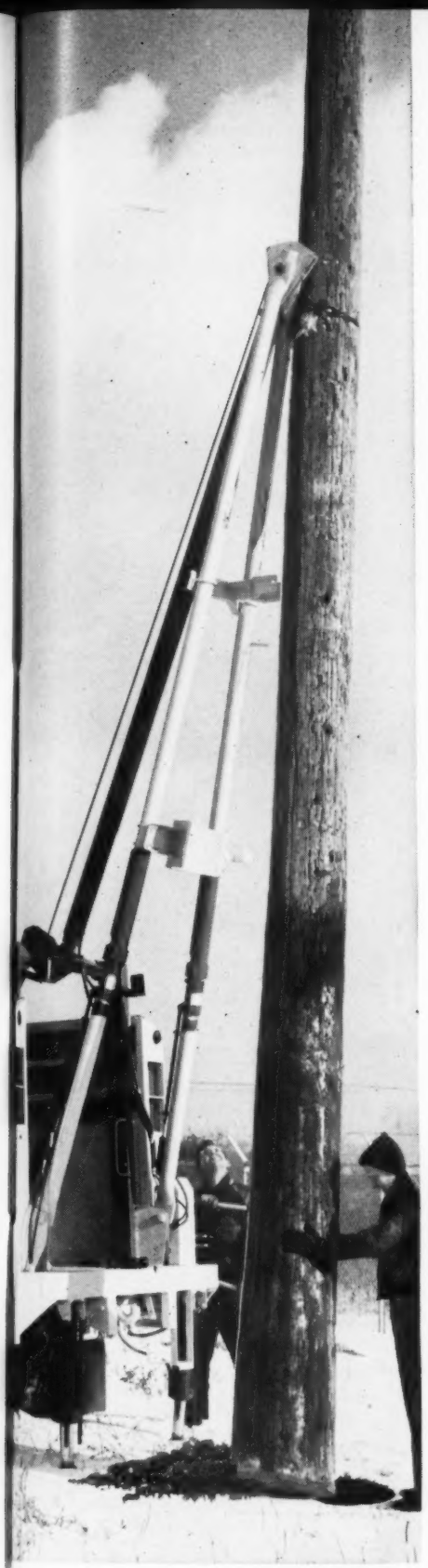


LIVE-BOOM DERRICK RISES TO THE OCCASION

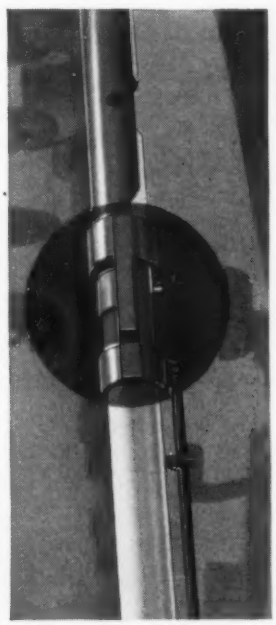
This 5700 Series Holan derrick literally rises to the job at hand. In a matter of seconds, smooth hydraulic power brings the derrick from out-of-the-way overhead storage into working position.

The derrick lifts poles 55 feet long, has an infinite number of lifting positions and gives live-boom action even with a single-drum winch. Its capacity: 6000 pounds . . . 2000 pounds for loading into the truck body.

To keep the derrick rigid, you can specify pin locking or Holan's exclusive hydraulic sleeve locking . . . completely automatic coupling of the side legs. Write for catalog on Series 5700 Power Derrick.

PIN-LOCK TYPE

Unique pin arrangement requires established sequence for locking the derrick. You can't pull out the wrong pin.



SLEEVE-LOCK TYPE

Operator pushes control lever and sleeve slides upward to lock derrick. Stop pins prevent the sleeve from accidentally disengaging.

Line construction bodies for light to heavy-duty. Crew compartments optional. Efficient tool compartments and drawers.

Aerial arm for spotting workmen 37 feet above ground, 9 feet below ground level. Rotates 360°.

Service bodies for chassis up to 1½ ton. Lengths, 72", 75", 84", 90" and 102".

Hydraulic Derricks designed for front or rear mounting. Capacities to 12,000 lbs.

Light-duty power operated derricks for front or rear mounting. Operating range of 146°.

Ladders to 40' with all phases completely hydraulic. Pump actuated by P.T.O. or separate engine drive with electric starter.

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Hydraulic jacks, controlled from rear of truck. Rigid mounted or patented Holan self-stowing types.

Hydraulic towers with rotary, stationary, or transverse platforms. Exclusive box-girder telescoping mast.

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for complete details on these
service-proven electronic products

A REPEATER THAT GIVES MORE THAN GAIN

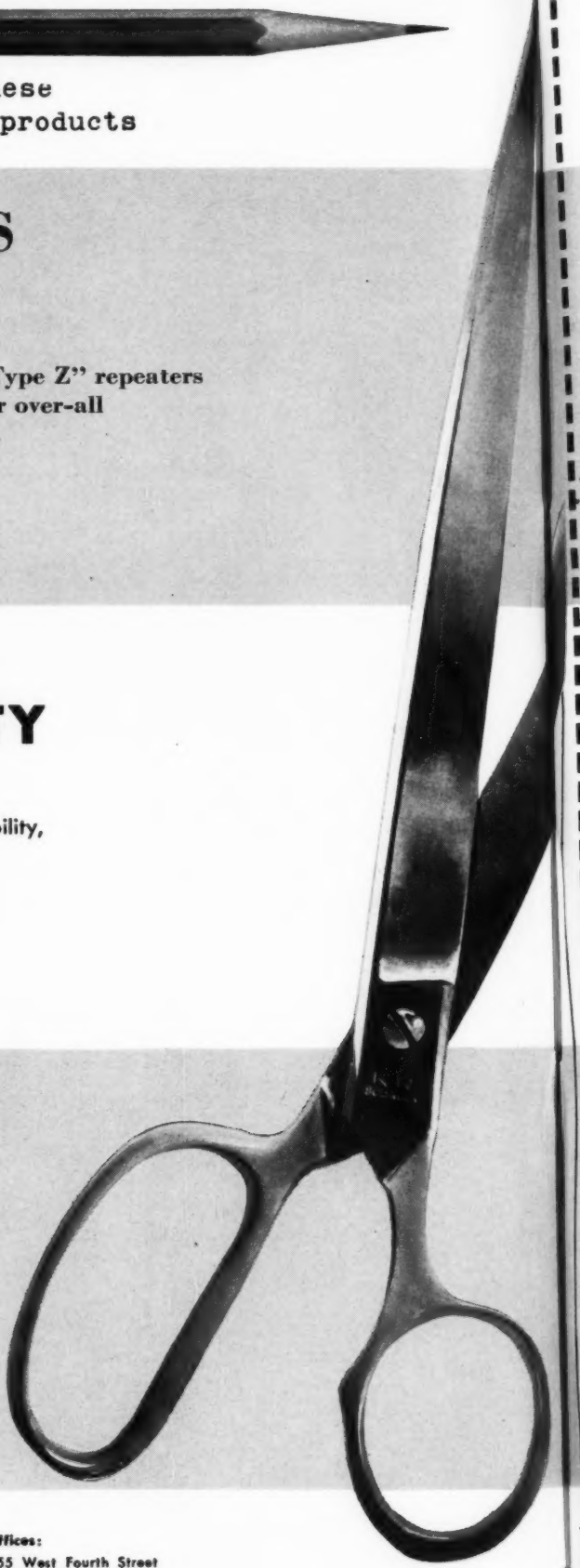
Gain alone is not enough. Kellogg "Type Z" repeaters equalize the circuit, giving you flatter over-all response for maximum intelligibility.

A RINGING GENERATOR WITH PROVEN RELIABILITY

This Kellogg 5-frequency electronic ringing generator features long term frequency stability, negligible maintenance, and absence of cross-ringing.

AN FM CARRIER SYSTEM OF UNEQUALLED PERFORMANCE AND UNMATCHED SIMPLICITY

Only FM Telephone Carrier Systems give you inherent regulation, crystal controlled frequencies, and freedom from line-up and adjustment procedures.



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- ☐ Low first cost
- ☐ Low operating cost
- ☐ Reduce transmission losses up to 85%
- ☐ Equalized circuit response over entire voice band
- ☐ Compactness
- ☐ For trunk and subscriber use
- ☐ Variable controls make rapid setup practical
- ☐ Operate from 48V exchange battery
- ☐ Sealed, high quality components
- ☐ Plug-in construction
- ☐ Built-in automatic equalization

FEATURES OF THE KELLOGG ELECTRONIC RINGING GENERATOR

- ☐ Low cost
- ☐ Completely silent operation
- ☐ All frequencies instantaneously available to operate
- ☐ No cross-ring problems
- ☐ Furnishes adequate ringing power for 1000 lines (or up to 3000 lines using commutated ringing distribution)
- ☐ Not damaged by overload or shorter lines
- ☐ Plug-in components insure easy maintenance
- ☐ Extreme frequency stability under varying conditions
- ☐ Any combination of any 5 ringing frequencies available

FEATURES OF KELLOGG'S FM TELEPHONE CARRIER

- ☐ Automatic regulation is inherent
- ☐ Carrier frequencies are crystal controlled
- ☐ Factory preadjusted . . . no additional adjustments are required in most installations
- ☐ Accommodates all normal types of ringing
- ☐ Will not interfere with standard AM carriers of different frequencies on the same circuit
- ☐ Minimizes noise and cross-talk problems
- ☐ Basic units are interchangeable, plug-in type
- ☐ Provides 10 channels per wire circuit, or 20 channels per pole lead
- ☐ No line-up procedures required
- ☐ Low cost

Name _____ Firm _____

City _____ Zone _____ State _____

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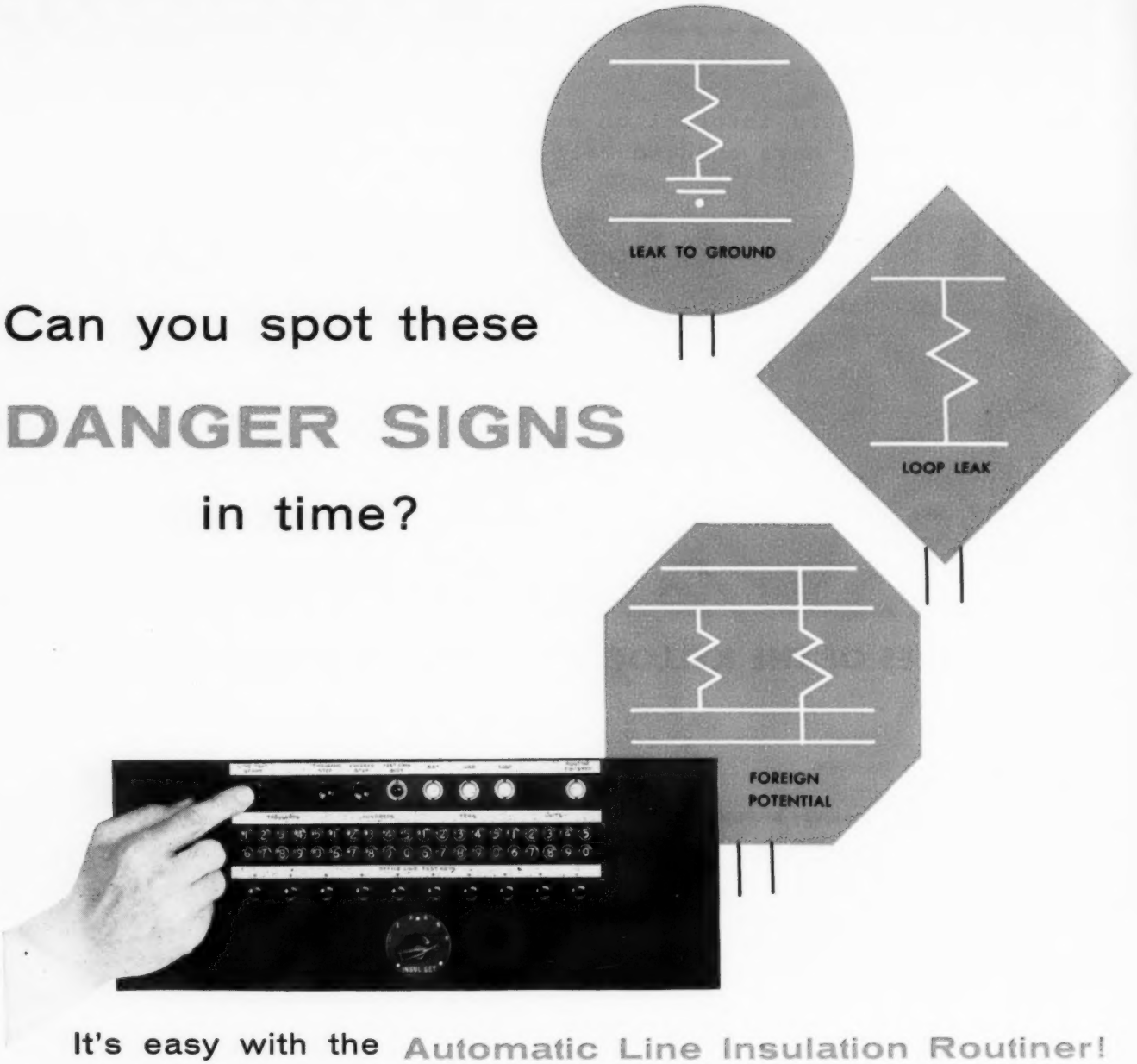

Can you spot these DANGER SIGNS in time?

It's easy with the Automatic Line Insulation Routiner!

Find line insulation faults *before* they become trouble tickets. Here's how. Apply the **Automatic Line Insulation Routiner** to any Strowger exchange having a regular switch train. Push a button, and the Routiner checks the insulation condition of every subscriber line. Automatically, it tests for leak to ground, loop leak, and foreign potential. Fast, too! It tests 30 lines per minute; a 5000-terminal office can be completely routined in less than three hours.

Use the Routiner to cut your routining costs, spare maintenance men, and improve service. Write today for Circular 1811. Address: *Automatic Electric Sales Corporation, 1033 W. Van Buren St., Chicago 7.* Or call, *HAymarket 1-4300.*

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ORIGINATORS OF THE DIAL TELEPHONE

Copperweld LINE WIRE

TRADE MARK

keeps upkeep down

When Copperweld* Line Wire goes up, it's up to stay. Non-rusting Copperweld has the permanent high strength to resist even the worst weather conditions year after year. Thus, you get longer service life—lower operating costs. At the same time, you get better talking qualities, because Copperweld has the best electrical conductance of any long-span conductor. What more could you ask for in a line wire?

*Trade Mark

COPPERWELD STEEL COMPANY
WIRE AND CABLE DIVISION *Glassport, Pa.*

For Export: COPPERWELD STEEL INTERNATIONAL COMPANY, New York

SOLD BY LEADING DISTRIBUTORS

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FLASHES AND PLUGS

ELECTRONIC NIGHTMARE. A Sayreville, N.J., motorist, abroad in the wee hours the other a.m., crashed into adjoining power and telephone poles on Main Street, and immediately reaped a whirlwind. He himself had to be taken to Perth Amboy General Hospital for cuts, bruises and possible head injuries. He also received, by way of understatement, a summons for reckless driving.

What happened to the rest of the townsfolk was also worthy of mention—in fact they're still mentioning it. This borough of some 13,500 souls was abruptly shaken from slumber as hundreds of telephones began to ring and fire sirens in Sayreville and neighboring communities began to blare and continued to do so for 20 deafening minutes. Volunteer firemen, jumping from their beds, rolled their trucks out into empty streets. . . . looking for a fire which wasn't. To add to the confusion, many streets were dark, with street lights out and power cut off in many homes.

The switchboard at the local police headquarters, however, lit up like a Christmas tree. Likewise that of the New Jersey Bell Telephone Co. in neighboring South River—which rushed crews to the scene, as did the Central Jersey Power & Light Co.

By working steadily all night, temporary repairs were made so that when day broke, the town was beginning to simmer down to normal.

At 8:10 a.m., chaos started to pop again when 10 sirens, still being repaired, blared twice. Ten minutes earlier it would have been the signal to school children that school was out for the day. As it was, the town's youth yawned, protested, and trudged off to school.

•

IT HAPPENED IN TEXAS. On his return from a business trip to Texas, Brown gave his wife four mink coats, two Cadillacs, scads of money.

"Honey," she gasped, "where in the world did you get all these things?"

"Nothing to it," said Brown, beaming. "We were in Houston on Hallowe'en and, just to kill time, we went out and played 'trick or treat'."

•

WHEN IN ROME—. At the Wichita Falls General Hospital one day not long ago, a man carefully scrubbed his hands, then proceeded to dress himself in a conventional hospital white cap, gown, gauze mask and rubber gloves. If anyone had bothered to give him a second glance, they would have said: "Here is a physician preparing to go on duty."

But they would have been wrong. This was no Dr. Kildare en route to surgery but a telephone repairman answering a routine trouble report.

In this case, however, the ailing instrument was in the nursery and the hospital authorities were taking their usual precautions against germs.

CIRCULATION

Guaranteed circulation of this issue is 11,283 of which 10,730 is paid.

Telephony

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Since 1901

June 23, 1956

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Telephone WA bash 2-2435

Now Sam knows we prefer PENTA, too . . .

Sam is one of those active front-office guys who like to get out and see what's going on around the district. He came by the other day to see how things were going on the new stretch of line my crew was putting in.

easier to handle

I told him we were getting along fine since we started using poles treated with PENTA*. Sam asked why, so I explained that we like PENTA-treated poles because they're *clean*—easy to handle and install, easy to climb.

Sam smiled a little and said that the front-office people like PENTA-treated poles better because they get fewer complaints from people who happen to brush against them accidentally. He said the attractive appearance of the poles is doing a good public relations job for the company.

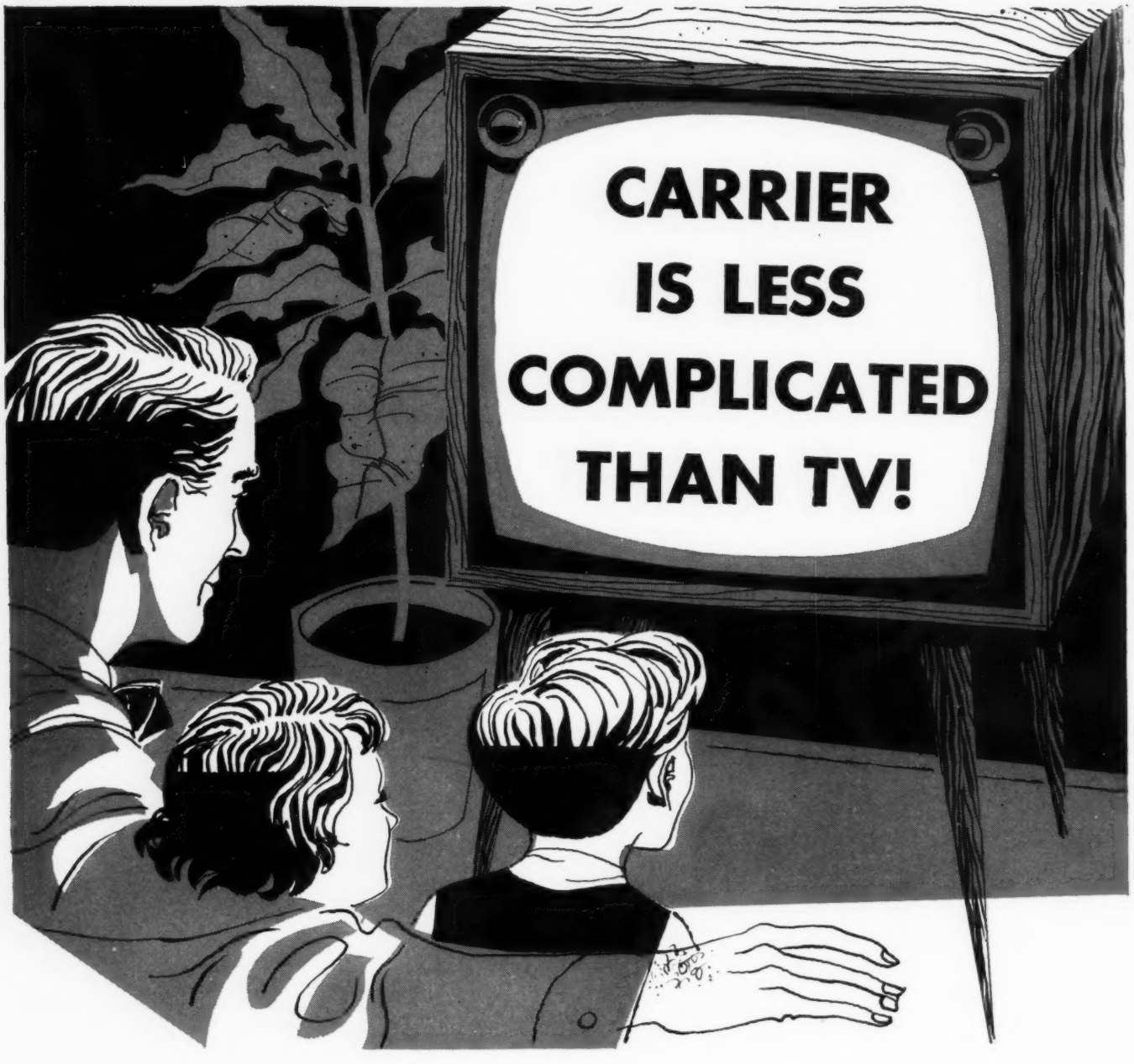
Sam pointed out that the company has to consider more than just appearance and easy handling when they buy poles. Long life and price are important, too, and Sam said that PENTA-treated poles fit on both counts. They last and they don't cost any more.

Looks like our company is sold on PENTA. How about yours? THE DOW CHEMICAL COMPANY, Midland, Michigan, Dept. PE 981C-1.

**Pentachlorophenol*

you can depend on DOW CHEMICALS

DOW



Millions of people enjoy television without understanding its installation and maintenance.

Perhaps you have been putting off the use of carrier because you consider it too complex, too difficult to understand, maintain, and operate. *A Lenkurt Carrier System* will soon change your mind. It is engineered to your requirements and comes to you factory-assembled, rack-mounted, and tested as a system. Installation is quick and easy, and in a matter of minutes it's "all set to go" . . . not as complicated to maintain as the television set in your home. And your worries about adequate circuits are over.

Many companies with *no* carrier experience have found it surprisingly simple and easy to add new circuits with Lenkurt Type 33A carrier equipment. This system has proven itself the least expensive, least complicated, and fastest way to add new channels. Type 33A often proves in at distances as short as 7 miles. You can start with a single channel, if you like, add a second, then a third—up to a total of six channels on a phantom group.

If you would like to know more about a Lenkurt Carrier System—and our "Package Plan" service—write to Automatic Electric Sales Corporation, 1033 West Van Buren Street (HAymarket 1-4300), Chicago 7, Illinois. In Canada: Automatic Electric Sales (Canada) Ltd., Toronto. *Offices in principal cities.*

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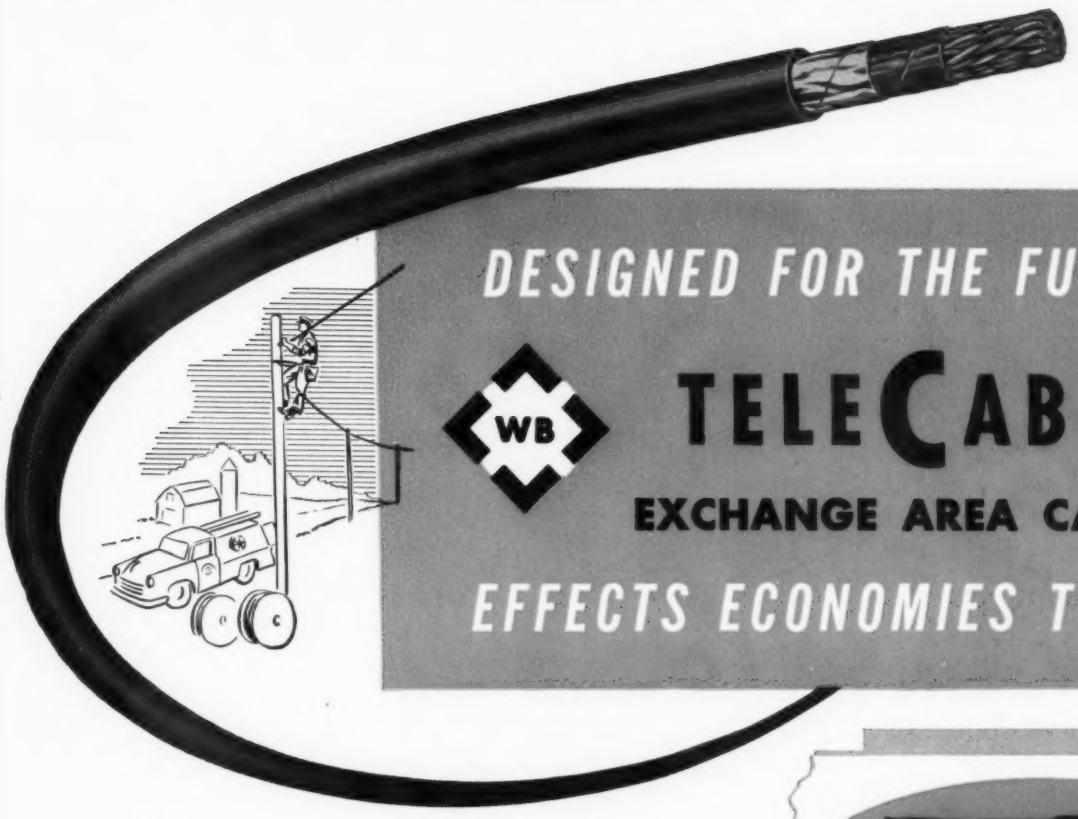
Originators of the dial telephone · Pioneers in automatic control



DESIGNED FOR THE FUTURE

TELECABLE®

EXCHANGE AREA CABLE

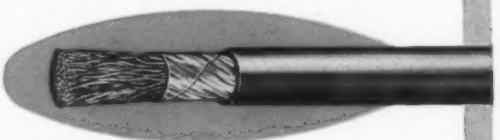
EFFECTS ECONOMIES TODAY!

Your needs today, when correctly interpreted and properly met, mean tremendous savings in the future.

TELECABLE Exchange Area Cable meets today's needs and, as manufactured under Whitney Blake high standards of quality, promises to favorably affect the future economy of the Independent Telephone Industry as greatly as WB TELEPRENE® neoprene jacketed drop wire has in the past ten years.

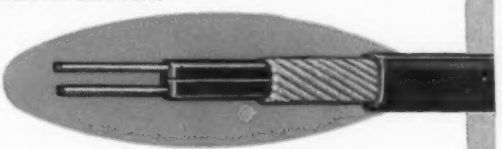
Only products of the highest quality can effect such economies — and the Whitney Blake reputation for top quality products is known throughout the industry.

TELECABLE Exchange Area Cable is available in #24, #22, and #19 AWG, in 11, 16, 26, 51, 76, 101, 152 and 202 pair. It has polyethylene insulation, polyethylene tape over cabled pairs, an aluminum shield and black weather-resistant polyethylene jacket.



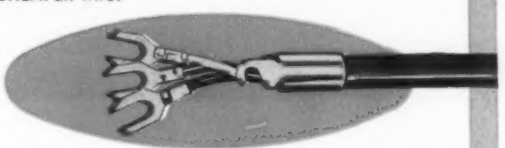
TELECABLE Inside Wiring Cable

TELECABLE INSIDE WIRING CABLE has semi-rigid Plastite® insulation and brown or ivory Plastite jacket. Light in weight. Water resistant. Excellent electrical characteristics. Unaffected by humidity. Ideal for duct work.



TELEPRENE® Neoprene Jacketed Drop Wire

Famous WB long life drop wire has demonstrated that a BETTER wire is much more economical than a CHEAPER wire.



TELECORD® Neoprene Jacketed Telephone Cord

This sturdy, long-lasting telephone cord resists abrasion, perspiration, humidity, oil and grease. Specify TELECORD on new telephones and on replacements for economy and service.

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WB *has* that which so many others have yet to gain . . . EXPERIENCE

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Keep repair crews from

Restoring service on a stormy night is work enough. Repair teams will make better time if they don't have to fight their way through a jungle of brush and weeds to the scene of trouble.

Chemical control of weeds and brush keeps the right-of-way clear. Repairmen work safely, swiftly . . . outage time is reduced. You save valuable hours of manpower and service.

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tangling with trouble...

to a clean right-of-way. Your own crew can apply these easy-to-apply chemicals. We'll be glad to send cost figures showing how other people saved money using Dow selective herbicides. Write THE DOW CHEMICAL COMPANY, Industrial Section, Agricultural Chemical Sales Department, Midland, Michigan.

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you can depend on DOW AGRICULTURAL CHEMICALS

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NOW contains a polyethylene tape* developed by radiation chemistry

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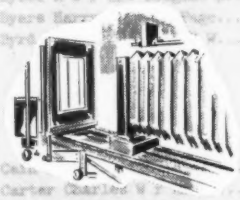

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KIND OF RECORD

☐ Have representative call. Date _____ Time _____

Company _____ *Attention* _____

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City _____ *Zone* _____ *State* _____

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Ever hear the one about the guy that didn't use

GOULD

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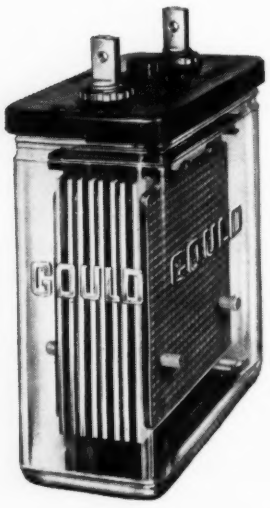
BATTERIES?"



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IN THE NATION'S CAPITAL

BY FRANCIS X. WELCH, WASHINGTON EDITOR

Troubles within certain unions indicate AFL-CIO merger honeymoon is over and period of practical adjustment is at hand. . . . CWA warned on increased activity of IBEW in telephone field. Conservatives in Great Britain deplore increasing taxes to operate state-owned industries.

THOSE WHO felt that the nationwide amalgamation of the American Federation of Labor and the Congress of Industrial Organization was going to usher in an era of sweetness and light, between all affiliates of both major groups, are already tasting a few sour after-effects. Troubles within the Teamsters Union and International Longshoresmen Union, as well as publicized policy differences between such high-level personalities as AFL-CIO President George Meany and Vice President Walter Reuther, would indicate that the honeymoon is over and the period of practical adjustment is at hand.

There is little doubt that the marriage will "take," as far as that is concerned, but there will continue to be, for some time, occasional flare-ups and even open outbreaks, such as happen occasionally in the best regulated families. For that matter, continued peace and harmony had never been notable even within the respective affiliated ranks of the AFL or the CIO before the merger took place.

It is not surprising, therefore, that the recent national convention of the Communications Workers of America, held in Cleveland during the middle of June, should register a certain amount of lingering suspicion between sister unions active in the telephone field. The CWA delegates were warned on June 12 to be on guard against increased activity by a sister AFL-CIO affiliate—the International Brotherhood of Electrical Workers (IBEW)—in the communications industry.

The warning was issued by CWA Vice President J. J. Moran in a report to the 1,500 delegates urging them to intensify the drive to organize telephone company employes into their union. He charged that the IBEW, while keeping within the "no-raid" pact that paved the way for the AFL-CIO merger last December, "is attracting members of independent unions" into the IBEW and away from the CWA through "low dues."

"The independents when challenged by the CWA run to the IBEW," Moran continued, while pointing out that the IBEW's per capita tax is 70 cents a month as compared with the CWA's $1.50.

Other CWA Developments

Delegates to the CWA convention approved an omnibus legislative program resolution, but only after a floor fight developed on inclusion, by amendment, of a section placing the union on record in favor of state fair employment practices legislation. Besides fair employment practices, the resolution called for improvement in fair labor standards, unemployment and workmen's compensation, and social security benefits and continued opposition against "anti-labor" legislation at the national, state, and local levels.

The convention approved a report budgeting $4,479,444 for operating the union for the fiscal year 1956-57. Before approving the budget, delegates were advised that finances "were seriously depleted" as a result of last year's long strike of several months against the Southern Bell Telephone & Telegraph Co.

The report disclosed that for the 11 months ended Mar. 31, expenditures from the general fund were $27,398 more than receipts of $4,140,814. For the same 11-month period, during which the union levied a one day's pay assessment on its more than 300,000 members, the union paid $4,932,579 out of its defense fund, approximately 2 million dollars more than it took in.

Delegates elected William A. Smallwood of Atlanta to fill the unexpired term of the late Carlton W. Werkaw as vice president. They named George A. Gill, also of Atlanta, to fill Smallwood's unexpired term as director of the union's District 3.

One interesting question came up during another minor squabble between CWA factions which reached the floor at the Cleveland convention. That was the question of whether a telephone company should be permitted to fire an employe believed to have subversive connections. The delegates debated this as a "hot issue" because of the dismissal of the former president of a local union from the Wisconsin Telephone Co. as a security risk.

The majority of a 14-member board, headed by CWA President Joseph A. Beirne, recommended that the firing of Stephen L. Kreznar of Milwaukee should be taken to arbitration. But an articulate minority, following the lead of CWA Vice President A. T. Jones, opposed this course. Kreznar had been charged with belonging to the Socialist Workers Party, which is identified as a Marxist organization. Vice President Jones got so mad about this that he wanted to resign. Delegates to the Cleveland convention, however, rejected the resignation of Jones in the arbitration dispute that threatened to split the convention. Jones submitted his resignation in a surprise move. The 1,500 delegates promptly rejected it.

This incidentally raises an interesting question as to whether employment in a telephone company might be considered sensitive (from the standpoint of national security). There is quite a bit of fuss going on in Congress right now because of a split decision

XUM

of the U. S. Supreme Court, holding that a government employe could not be dismissed as a security risk where the nature of his employment was not such as to be considered sensitive to the national security.

In other words, the Supreme Court majority felt that a person engaged in routine duties for a government agency having no relation to national security matters, should not be dismissed on that ground.

Of course, there is no comparison between the two cases because the Wisconsin Telephone Co. case involved employment by a private company, whereas the Supreme Court decision turned on the construction of a federal statute controlling the employment of people working for the government.

In this connection, there might be noted another split decision of the U. S. Supreme Court upholding the right of a private company in California (Cutter Laboratories) to dismiss an employe for security reasons under California law even though the person fired was not shown to be performing any duties sensitive to national security. But the whole situation raises a question which may have to be settled some day. Do not most telephone company employes perform duties sensitive to the national security? It would seem that access to a switchboard or pole line connections, or supervision over other persons having access to the same, might be considered as imposing a special responsibility upon telephone company employment from the standpoint of national security.

How Much Control Is Monopoly?

In these days of concern within the telephone industry over expansion and contraction of operating company controls, as well as affiliated manufacturing operations, the recent U. S. Supreme Court decision in the Du Pont "cellophane case" is of passing interest. What the court held in this case was that a 75 per cent control of a product, which was in vigorous competition with other related, alternative, or substitute products, was not, in itself, evidence of a monopoly justifying prosecution under the anti-trust law.

The recent consent decree, ending the federal government's anti-trust prosecution of the Bell System because of the alleged monopoly position of the Western Electric Co.—its manufacturing arm—deals with an entirely different situation, compared with operations in such a competitive commodity as cellophane. There was no suggestion in the consent decree, or negotiations leading up to it, that there were alternative or substitute telephone equipment in such an abundance as to force Western Electric into open-market competition for a substantial portion of the Bell System business. Just the same, the reasoning used by the high court in the Du Pont cellophane case suggests that large-scale organization, in itself, is not an evil, subject to anti-trust prosecution, unless there is evidence of actual restraint of trade or unfair trade practices.

In other words, in dismissing the government's charges that Du Pont monopolizes the market in cellophane, the Supreme Court adopted the economic thesis that a monopoly in a single product does not necessarily constitute a violation of the Sherman Act. Since cellophane is merely a part of the relevant market for flexible packaging materials, the court simply concluded that it does not constitute a monopoly.

At the time the case was brought, Du Pont produced about 75 per cent of the cellophane sold in the United States, but cellophane constituted less than 20 per cent of all "flexible packaging material" sales. Thus, while Du Pont has had only limited competition from other cellophane manufacturers it has had stiff competition from other wrapping materials such as waxed paper, aluminum foil, cellulose acetate, pliofilm, and glassine. There was a steady decline in the price of cellophane from $2.50 a pound in 1924 to 38 cents a pound in 1940.

It is noteworthy that Du Pont licensed seven other companies to manufacture cellophane without any agreements on the prices to be charged for it. The dead hand of monopoly is nowhere visible; on the contrary, the development of new products and the development of competition appear to have been promoted. "We conclude that cellophane's interchangeability with the other materials mentioned suffices to make it a part of this flexible packaging material market," Justice Reed said for the majority of the court.

Justice Reed thus upheld the judgment of Federal District Judge Paul Leahy, who nearly three years ago dismissed the case, which was then appealed to the Supreme Court. Justice Reed found, in other words, that Du Pont should not be found to monopolize cellophane when that product has the competition from other wrappings that the record shows.

A dissenting opinion was delivered by Chief Justice Warren in which Justice Black and Justice Douglas concurred. This left a bare majority (of 4 to 3) in which Justices Frankfurter, Minton, and Burton concurred, with Justice Reed. The two other Justices, Clark and Harlan, did not participate.

Socialist Utility Subsidies

An interesting commentary on how the nationalization of public utility services works after it once gets started and accepted was seen in the recent "revolt" of the British Conservative government's own membership in the House of Commons. The revolt did not last long and probably did not amount to much more than registering a protest of disquiet. But it did hold up the annual finance bill on which Britain's revenue depends.

What the hard core of conservative element, within Prime Minister Eden's own party were griping about, was this: They did not see why the general taxpayers had to keep passing out money to finance low rates and other mass benefits extended by socialized state-run industries, mostly public utilities. Great Britain now runs the nation's telephone, gas, electric, telegraph, transportation, air lines, and coal mines.

The debate proceeded without incident until the government asked approval of a clause, which authorized the Chancellor of the Exchequer to make "advances" to these nationalized industries. The conservative dissidents growled about state-run utilities not standing on their own feet. They wanted to know when there would be an end to these subsidies instead of constant increases. Finally, they wanted to know why state utilities could not do more borrowing on the open market.

The rebels were eventually calmed by Exchequer Chancellor MacMillan. He explained that the clause only made a technical change in the method of borrowing and had no effect on the ministerial or treasury control of the capitalization programs of the state-run industries. The rebellion subsided and the bill was passed.

We have a similar agitation in the United States. The Hoover Commission thinks that the Tennessee Valley Authority ought to borrow its money on the open market and pay commercially competitive interest rates. The Eisenhower Administration is generally in favor of some such reform.

But Congress cannot make up its mind. If TVA were to get authority to borrow unlimited funds on the open market, Congress would lose the purse string controls over TVA operations and policies as well as control over future expansion. This, Congress is not resigned to do.

There will probably be a good bit

(Please turn to page 46)

REA Makes Telephone Loan Allocations in Five States

The REA during the week of June 4 to 8 made eight telephone loans in addition to the 6.8 million dollar loan made to the Texas Telephone & Telegraph Co. of Houston. This loan was the largest made by REA to date, and was reported on page 62 in the June 9 issue of TELEPHONY. The details of the other REA loans follow:

Hull Telephone Co., Inc., Houston, Tex., on June 4 was extended a loan of $975,000, first REA loan, to improve and extend rural telephone service in Hardin and Liberty counties.

The new borrower, a commercial company, will use these loan funds to bring telephone service for the first time to 1,513 farm families and other rural residents. At present, the Hull company serves 1,011 rural subscribers through magneto exchanges at Daisetta and Saratoga, a common battery office at Hull and automatic offices at Devers, Hardin and Liberty counties.

Construction proposed by the borrower includes 182 miles of line and new central offices at Batson, Hull and Saratoga. The present automatic facilities at Devers, Hardin and Raywood will be retained and enlarged.

Subscribers in the Daisetta area will be served from the Hull exchange. About 35 miles of the company's existing line will be rebuilt while 68 miles will be used in place.

W. G. Winters is president and manager of the Hull Telephone Co.

*

Chisago (Minn.) City Telephone Co. on June 7 was extended an allocation of $375,000, first loan, to improve and extend rural telephone service in Chisago County.

The new borrower, a commercial company, plans to use these loan funds to provide modern service for 920 families and other rural residents. There are 525 now receiving magneto service from the borrower, 240 will be new subscribers and 155 are now subscribers of the Stacy Telephone Co. The Chisago City company plans to acquire access rights to the Stacy subscribers.

The company will construct a new headquarters and automatic central office building in Chisago City, new automatic facilities in Wyoming, and 10 miles of new line. Of the existing 187 miles of line, 33 will be used in the expanded system, 151 will be rebuilt and the remainder retired.

Ernest E. Strand is president and Lambert J. Greene is manager of the Chisago City Telephone Co.

*

Wayne Telephone Co., Odum, Ga., on June 7 was extended a loan of $77,000, third REA loan to this company. The borrower's service area has been extended into Appling County by request of the Georgia Public Service Commission. The new loan funds will provide facilities to serve 175 rural families now without telephones, about 35 of them located in the expanded area.

To provide the additional service, the company plans to build 71 miles of new line with REA financing. Part of the loan funds will be used to complete construction authorized in prior loans to the Wayne company.

REA loans to the company now total $247,000. They will enable the borrower to furnish new and improved service to 515 rural subscribers over 176 miles of line in Appling and Wayne Counties. Automatic central offices will be located at Odum and Screvens.

Joseph W. Martin is president and manager of the Wayne Telephone Co.

*

Township Telephone Co., Inc., Chaumont, N. Y., on June 8 was allocated $350,000, first REA loan, to improve and expand rural telephone service in Jefferson County.

The new borrower is a commercial corporation serving 893 subscribers through an automatic central office at Dexter, and magneto offices at Chaumont and Three Mile Bay. The loan will be used to convert the system to automatic operation and provide facilities to serve 220 families and other rural residents now without telephones.

The company will retain the existing automatic facilities at Dexter, and install new automatic and commercial office facilities in its building at Chaumont. The Three Mile Bay area will be served from the Chaumont central office. Of the existing 123 miles of line, 86 will be used in the expanded system and the remainder retired. In addition, 82 miles of new line will be constructed.

Part of the loan will be used to refinance existing indebtedness of the company.

Wesley A. Daniels, Jr., is president and manager of the Township Telephone Co.

*

Comer (Ga.) Telephone Co. (formerly the Danielsville & Comer Telephone Co.) was extended a loan of $624,000, third REA loan.

With these funds the borrower plans to extend its service area into Clarke County and to serve additional territory in Oglethrope County in order to serve 577 rural families now without telephones. As a nucleus for the new service, the Comer company proposes to acquire the N. D. Arnold Telephone Co. at Lexington, now furnishing common battery and magneto service to 494 rural subscribers over 147 miles of line.

Construction proposed by the borrower includes new automatic central offices at Lexington and Winterville and 114 miles of new line. About 101 miles of the existing line will be rebuilt, 48 miles retained. A portion of these loan funds will be used to complete construction authorized in prior loans to the borrower.

The three REA loans to the Comer company total $962,000 and will permit it to offer new and improved service to 2,039 rural subscribers over 451 miles of line in Clarke, Madison and Oglethorpe counties. The system will consist of seven automatic exchange areas. Five of these are now in operation, serving about 900 subscribers.

John Birchmore is president and manager of the Comer Telephone Co.

*

The Utelwico, Inc., Talbotton, Ga., on June 8 also was allocated $36,000, second REA loan. The borrower plans to use the loan funds to provide facilities to serve 30 rural families who now are receiving switching service from the Mutual Telephone Co. of Box Springs, Ga. The switchers plan to abandon their own lines and become regular subscribers of the Utelwico system. Additional facilities will include 10 miles of new line.

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XUM

This instrument is a specially calibrated ohmmeter which is used to identify cable pairs by number.

One-Man

Cable Pair Identification

By HAROLD B. McKAY

THE SHORTAGE of trained manpower is noticeable everywhere in industry. Yet if the constantly expanding public appetite for more goods is to be served, this shortage must be overcome. In manufacturing industries automation and mechanization are enabling the existing labor force to turn out more products.

The telephone business must do something along the same lines. While automatic switching systems are, of course, the answer to the difficulty in obtaining enough operators, the answer is not so obvious in the case of plant workers.

The nature of the telephone business is such that many skilled operations must be performed under unsupervised conditions. Many of these operations require the close cooperation of people in different locations. Many such jobs are time-consuming and tedious.

Among such work operations is the job of identifying cable pairs. Outside types of cable have the wires insulated with colored material on the ring conductor which identifies the hundred count of the cable. That is, each group of 100 pairs will be marked with a distinctive color. The tip wires are usually white, and are identified by the ring conductor with which they are twisted.

This means that there is no immediate way of telling one pair in a given hundred from any other pair in that hundred. In practice, these pairs are identified by being "toned out." This is done by connecting a buzzer or other tone source at random to one of the unnumbered conductors at one end of the cable. A helper then explores through the cable at the other end until he finds the tone.

This pair is then assigned a number. At each end the identification is recorded by pulling each pair of wires through a "tag board." This may be a wooden panel or a linen strip containing holes which are numbered. Thus, when a pair is buzzed or toned out and identified, the splicer and his helper each put that wire through the correctly numbered hole in their tag boards.

When one end of the cable is being connected to the distributing frame in the central office, it is customary to connect the office end of the cable to the numbered blocks. This is done in a random fashion without identifying the pairs except by hundreds. At the first splice in the cable where it becomes necessary to identify the pair, the splicer applies tone to any unidentified pair. The helper then "runs the count" on the numbered blocks in the office until the pair is found. The splicer then puts his end in the tag board.

This whole operation can require quite a bit of time. Efficiency experts would probably chew their nails over the fact that only one of the two men ever work at one time. When the splicer is hooking up the tone, the helper is waiting; and while the helper searches for the pair, the splicer is resting.

The job also has the difficulty that any mistake made will become a permanent part of the splice, and everyone will have to live with it for years.

One-Man System

It was probably inevitable that somebody would develop a system which would make this operation a one-man job, and thus free the second man to practice a more skilled craft.

A solution to the problem was the design of a one-man cable testing system. This system, in addition to the advantage of one-man operation, is also characterized by a greatly reduced error possibility. It not only lessens the chance of error on the splicer's part, but also detects cable defects, such as crosses, which might cause wrong identification of pairs if older methods were used.

The one-man cable testing system uses a single instrument, which is electrically a simple ohmmeter. In operation, the pairs in a cable are connected through a tag board to a binding post strip. This strip has resistances connected between the binding posts as shown in the circuit drawing *(See Fig. 1)*.

An ingenious pattern of connecting the pairs to these 20 binding posts makes it possible to identify them from the other end by measuring the resistances.

This is done as follows:

At one end of the cable, the pairs are run at random through a numbered tag board. After passing through the holes, the tips are unwound from the rings, 10 at a time. To use the count 10 to 19 for an example, the tips of all of these pairs are twisted together and hooked to the tip binding post No. 1. The rings are then connected to binding posts 1 to 0, inclusive.

That is, the ring of pair 10 goes to binding post 0. The ring of pair 11 to binding post 1; the ring of pair 12 to binding post 2, etc.

For the count 20 to 29, the rings go to the same posts as for the count 10 to 19, but all of the tips are bunched together and hooked to tip post No. 2. The rule then becomes: For any pair, the tip is connected to the post numbered the same as the tens digit, the ring is connected to the post numbered the same as the unit digit *(See Fig. 2)*.

The tracer pair which appears in each hundred count is connected to the zero terminal. This method will handle one hundred pairs with connection to

the terminal strip through a hundred-hole tag board. It is possible to identify several hundred pairs in the same manner with only one terminal strip, if the corresponding pairs in each hundred count are connected together with bunch wire or strapping wire.

For example, pairs 123, 223, 323, 423, 523, etc., would be connected together tips to tip and tip to ring, and would be hooked up on the terminal board along with pair 23. The splicer could tell one from the other by the hundreds color code.

Where one end of the cable is already connected to blocks in the central office, the lugs may be tied together as required and then hooked to the terminal strip.

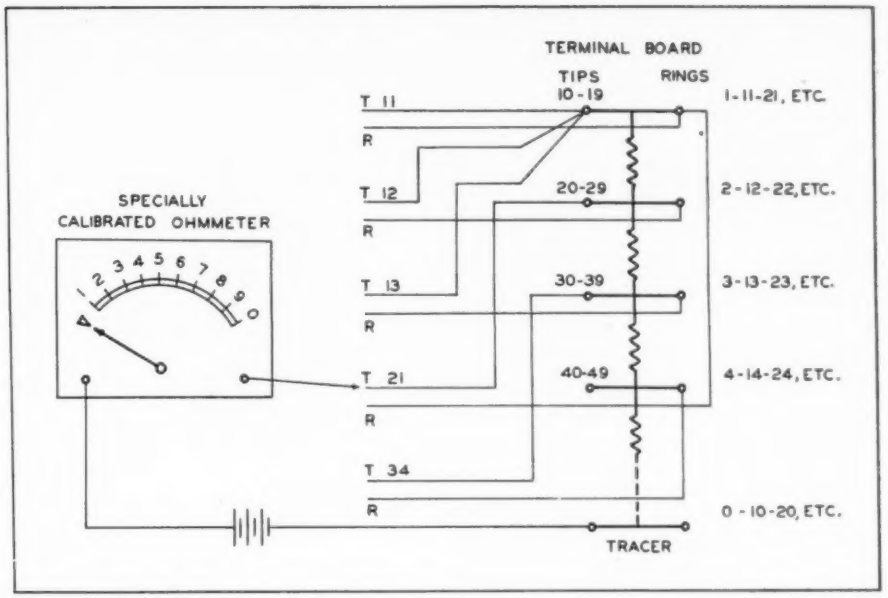

Fig. 2. When the pairs of a cable are connected at one end to a terminal board as shown, they may be identified at the other end by making resistance measurements. The pairs are connected so that the tips and rings are separated and arranged in the pattern shown. In use, if the meter is connected to the tips of a pair numbered from 10 to 19, for instance, the special scale on the meter will translate the resistance of the terminal board to a reading of "1". When connected to the ring of the pair it will again measure the resistance and give a reading which will be the units digit of the pair. (Drawing by Victor Willard.)

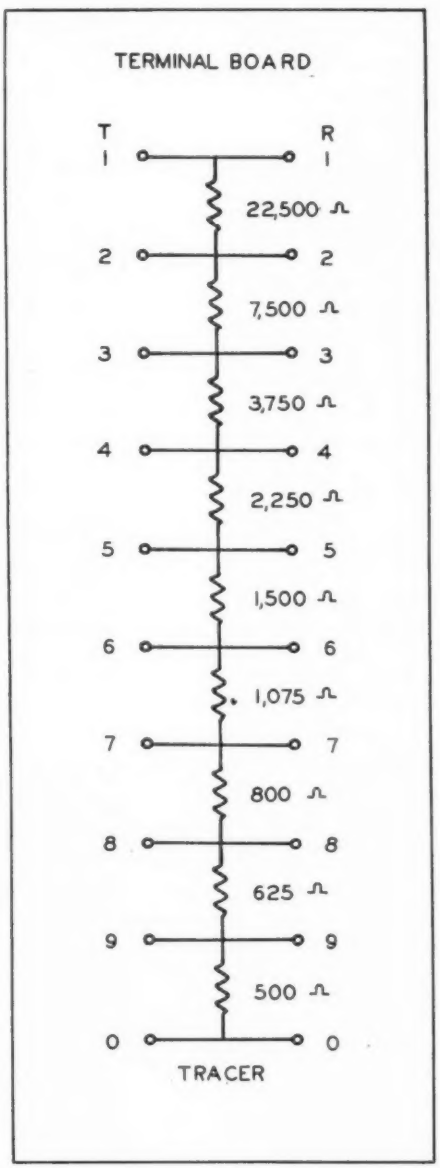

Fig. 1. The terminal board used with the tester is essentially a tag board equipped with the binding post strip shown in schematic above. The fixed resistances between the binding posts have been chosen to produce a linear reading on the special ohmmeter used. (Drawn by Victor Willard from a Murphy Laboratory original.)

Setting Up

When the cable tester is first set up and one end of the cable connected, the ohmmeter is applied directly to the terminal board. One lead from the meter is connected to terminal 0, and the other then connected in turn to each of the binding posts. The instrument actually measures the resistance between the zero post and the other number selected. An ordinary ohmmeter would read this in ohms.

The cable testing meter, however, has a specially calibrated scale. In addition to reading in ohms, it has a set of large figures which have been calculated to indicate the binding post number directly. This is shown in *Fig. 3*.

For instance, if the probe is touched to the tip of pair 23, the needle will move over to the digit 2. If it is then touched to the ring of this pair, it will show the digit 3. Thus any pair can be identified in an instant. The tip will give the first figure, the ring the second figure. *Fig. 2* shows how this is done electrically.

Normally, an ohmmeter has a compressed scale at the left hand side of the meter. That is, the numbers get closer together until they become unreadable. The cable testing meter overcomes this by gradually increasing values of resistance on the terminal board. This results in even spacing of the pair numbers on the meter.

The above operation, performed right at the terminal board, does not, of course, serve a purpose in identifying the pairs because they are already connected to the number posts. However, it will show up any crosses or cable trouble which may exist.

For instance, if a cross or other electrical defect exists in the cable, it will give a wrong indication on the meter. In making this test, each pair should

(Please turn to page 51)

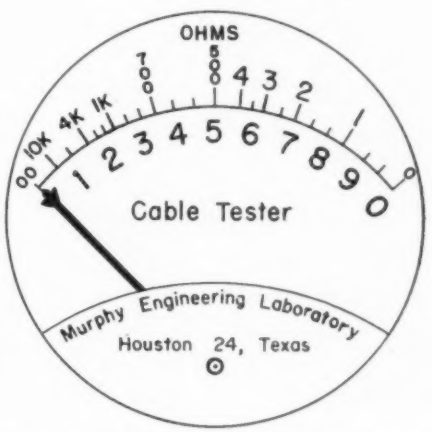

Fig. 3. The special ohmmeter used in cable testing has a linear scale marked one to zero which identifies the pair number. It also has a standard "ohms" scale for use in measuring resistance. (From a Murphy Engineering Laboratory drawing.)

XUM

Illinois Holds 51st Convention

By R. C. RENO

THE ILLINOIS Telephone Association held its 51st annual convention on May 16 and 17 in Peoria, with 525 representatives of telephone operating companies and manufacturers and suppliers in attendance. The meeting was presided over by Association President M. A. Kugler of Okawville.

In opening the convention, President Kugler commented upon the association's activities in connection with helping the smaller companies in the state with their various problems, through the association's Small Company Assistance Committee.

He emphasized the value and need for small companies in the Independent segment of the industry in particular and the private enterprise system in general. He further stated that it is the responsibility of large companies, through the association, to lend a "helping hand" to the small companies.

Secretary J. G. Hardy, in his annual report to the convention, traced the activities of the association. He reported on the work of the Legislative Committee in representing the telephone industry before the state legislature.

The association's Traffic Committee, Mr. Hardy reported, developed and distributed a toll tributary operating guide and held toll center tributary meetings throughout the state—the fourth year for such meetings.

The association held eight district meetings, which were sponsored by the Small Company Assistance Committee. The total attendance at the meetings was 531.

Secretary Hardy also assisted various Class C and D Independent companies in presenting rate increase applications to the Illinois Commerce Commission. Increased revenue to these companies amounted to approximately $100,000 for 1955, Mr. Hardy said.

The convention heard Orville E. Hodge, auditor of public accounts for the state of Illinois, tell how his office had introduced modern accounting and inventory machines and principles in its operations. He said adoption of such methods had not only increased the efficiency of the auditing department, but had resulted in savings to Illinois taxpayers.

Mr. Hodge praised the accomplishments of the telephone industry and recommended that all telephone companies increase their efforts to "tell the people" what they are doing to serve them. He said communication service is the backbone of the nation's economy and the link which will protect and strengthen our private enterprise system.

"Some Aspects of Telephone Financing" was the subject of an address by William F. Murray of Chicago, vice president of Harris Trust and Savings Bank. Mr. Murray pointed out that historically, commercial banks have entered into the financing picture for telephone companies, and for the public utility industry at large, primarily in

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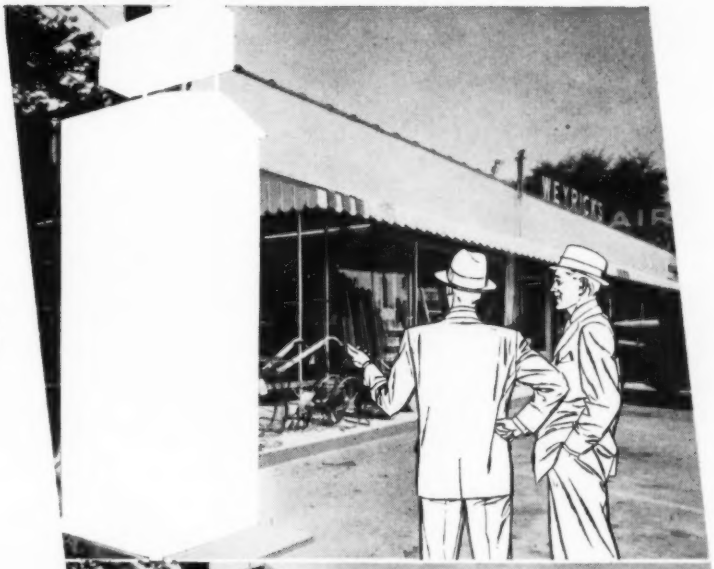
Officers and directors of the Illinois Telephone Association. Seated, left to right: R. C. Ross of Springfield; R. A. Lumpkin of Mattoon; Walter Dakin of Madison, Wis.; Donaldson Coombs of St. Louis, Mo.; M. A. Kugler of Okawville; R. C. Reno of Chicago (guest); J. G. Hardy of Springfield; Russell Logue of Casey; Roland Schmidt of St. Jacob, and Don Anderson of Geneseo. Standing, left to right: Daniel Schaefer of Sycamore; K. L. Schroeder of Freeport; Ray Alter of Galesburg; C. F. Melick of Eureka; Dr. J. G. Schwarz of Jerseyville; W. R. McGrew of Park Ridge; B. W. Saunders of Springfield; R. B. Still of Bloomington; J. I. Kennedy of Freeport, and Ben B. Boynton of Springfield. Directors and officers not in photo are Gordon Aller of Chicago; Harry H. Bates of Dixon (deceased); W. C. Drysdale of Rantoul, and A. T. Renn of Chicago.

XUM

Idea...

An Indiana Independent, alert to new business opportunities, spotted this service station and thought it would make a likely paystation site. He was *right!* This location . . .



Pays Off

an average of $82.50 per month, and is proving a great convenience to service station customers. Remember . . .

For You...

too, locations like this could be paying rich rewards. Now, while the weather is good, go out and check the service stations in your area—and the drive-ins, highway junctions, bus stations, motels, and trailer camps, too. Install Autelco Paystations in substantial booths; mark them with big, colorful signs—and you'll surely build paystation revenue. Write for Catalog T 4078-B and booklet, "How to Make Paystations Pay." *Address: Automatic Electric Sales Corporation,* 1033 *W. Van Buren St., Chicago* 7. *Or call HAymarket* 1-4300.

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with LEICH DIAL

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For by then the fanfare has been passed over and he's down to the serious business of making this equipment give good service and produce a profit for his company.

He'll still be smiling happily, and will tell you that the Leich Dial System is a wise investment for the following reasons:

DEPENDABLE ALL-RELAY SERVICE

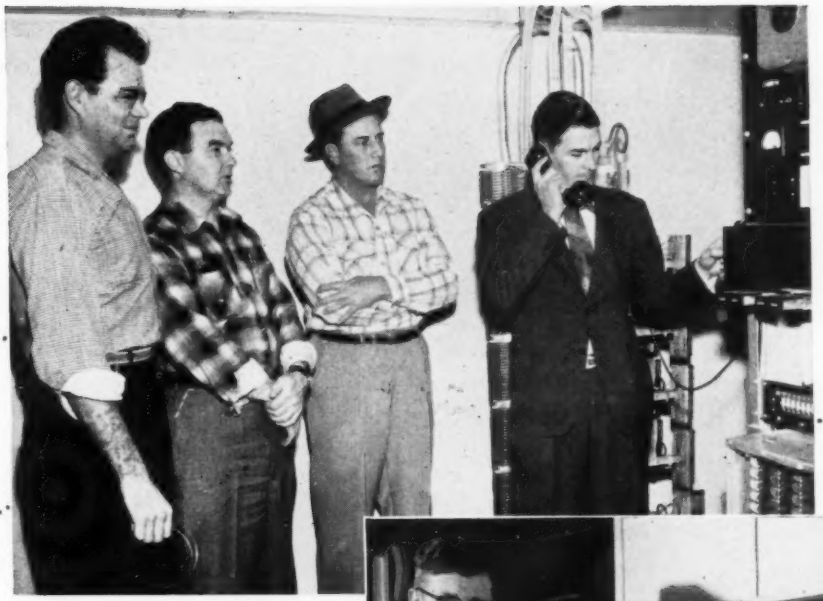
Leich's all-relay operation eliminates the need for elaborate switching mechanisms which are apt to wear and require maintenance or adjustment. The simplified arrangement means that there are thousands fewer soldered connections which are another source of potential trouble. We've had customers tell us that they were amazed at how long and how well their Leich Dial Systems would operate without a single case of trouble.

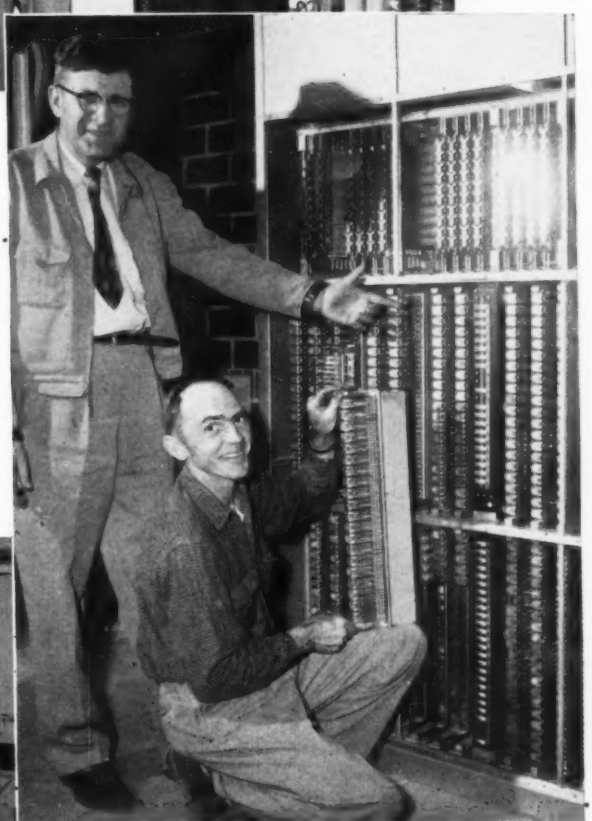
FLEXIBILITY THAT SAVES MONEY

All the equipment jacks-in on bays which are wired for their capacity of 100 lines and 15 links. Thus, additions or regrouping of equipment can be done quickly and inexpensively by jacking-in the desired equipment. There's no wiring, no soldering, no factory installers. Compare these costs: You can add ten lines to a Leich Dial System for $175.00. A link can be added to a finder-connector switchboard for $323.00.

Want to know how a Leich Dial System will work in your exchange? Write today. There's no obligation. We'll be delighted to give you full details.

LEICH





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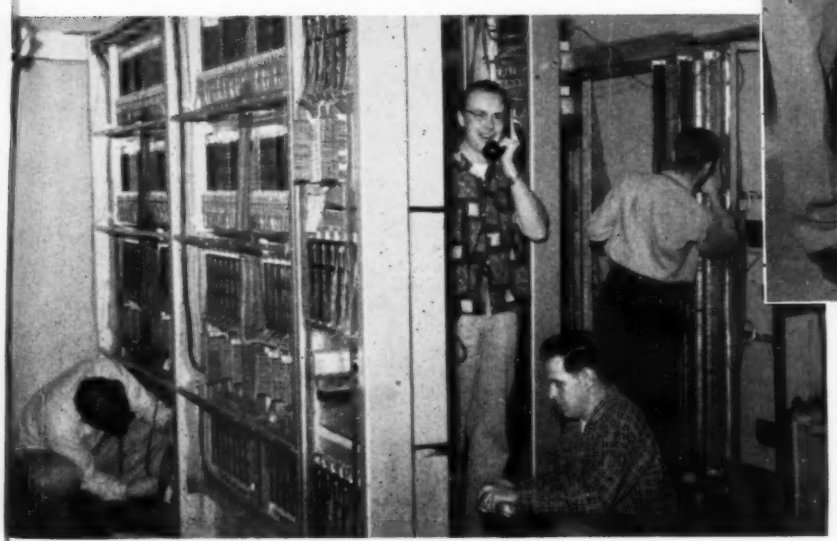

TOP: *Fouke, Arkansas—Southwest Arkansas Telephone Cooperative*

CENTER: *Rice, Minnesota—Benton Co-op Telephone Company*

LEFT: *Chewelah, Washington—General Telephone Company of the Northwest*

MANUFACTURERS OF TELEPHONES, SWITCHBOARDS AND RELATED APPARATUS SINCE 1907

LEICH SALES CORPORATION 427 W. RANDOLPH STREET CHICAGO 6, ILLINOIS

PACIFIC COAST: 11401 WEST PICO BLVD., WEST LOS ANGELES 64, CALIF. SOUTHWEST: 1227 SLOCUM ST., DALLAS 7, TEXAS

GENERAL TELEPHONE SYSTEM

the role of providing interim credit during the construction period, and until the companies can arrange their long-term permanent financing.

Speaking of the limit to which long-term debt should be assumed, Mr. Murray stated:

"We think that the best way to get hold of the problem of raising money is first to develop a thorough and comprehensive budget in order to determine just how much money is going to be required to do the job. There are certain broad patterns of capitalization which have been developed that pretty well control the proportions of bonds and other credit obligations, as well as the proportion required to be represented by stock.

"Over-all, I should say that long-term debt should not exceed 60 per cent of capitalization with the remainder being supplied by some form of equity. There are always variations from the norm, of course, which will depend upon individual circumstances such as the rate of growth in the territory, whether the company is closely held among a few stockholders of substantial means, as well as the assurances which the owners are willing to give the creditor. Sometimes it is appropriate to use modest amounts of preferred stock in substitution for a portion of the common stock and this will depend largely upon the individual company and local circumstances. . . .

"Certainly, if permanent debt is incurred to the extent of 60 per cent of the capital structure, you can be reasonably sure that the credit is going to require stiffer provisions for reduction of the debt than as in the case of a lower initial amount. Most modern mortgages now permit issuance of additional bonds from time to time against property additions on some predetermined ratio, usually not more than 60 per cent of the value of such property additions.

"Very often the question arises—why should I be burdened with a sinking fund as long as the company is in a growth cycle, since all this does is increase my costs? There is a good deal of logic to this argument but, on the other side of the fence, the bondholder takes considerable assurances from the company's ability to handle its debt service as demonstrated by the periodic sinking fund payments and also likes to have an opportunity to take a look at his funds from time to time in the light of current income yields."

This foursome, photographed at the Peoria meeting, are left to right: Ollie Meyer of St. Louis, Mo.; D. A. Stephenson of Woodlawn; W. C. Heyl of Waterloo, Ill., and Roland Schmidt of St. Jacob.

J. G. Schwarz (left) of Jerseyville; L. E. Savage (center) of Chicago and R. A. Lumpkin of Mattoon get together at Illinois convention.

The earning power of a company, said Mr. Murray, is an all-important factor when it seeks financing and he commented upon the minimum standards of earnings coverage which are followed by institutional investors. He said:

"The appraisal of earning power is all important and, in approaching institutional investors, it is good to have in mind that there are minimum standards of earnings coverage from which, as a matter of policy, their finance committees are not going to deviate. In the first place, most of them will have statutory requirements that an obligation must have certain minimum coverage over a period of years in order to qualify as a legal investment.

"As a matter of fact, those companies which cannot qualify their obligations as legal investments, either because they were only recently organized or because they are adding so much new plant as to make their historical earning power of little significance, can only be considered under the provision of the statutes which permits many insurance companies to invest up to 5 per cent of their assets in so-called non-qualifying investments.

"Considering the enormous pools of capital which the insurance business represents, this 5 per cent is still a large figure, but about the only difference that I can see would be that the finance committees are thereby permitted to place reliance upon the projected earning power rather than historical records.

"The minimum coverage will vary from situation to situation but, perhaps, on the average, it might be fair to say that the company must demonstrate the

(Please turn to page 58)

View of registration desk at Illinois convention. D. E. La Master of Springfield, a member of the convention committee, is shown at extreme right.

ESCO RINGING EQUIPMENT

MEMBER

ADDITIONAL ESCO FEATURES (details in future ads pictured on the dial) — further explain why Esco components are included in installations of prominent suppliers like Automatic Electric Co., Federal Telephone and Radio Corp., Kellogg Switchboard and Supply Co., Leich Sales Corp., and Stromberg-Carlson Co.

motor-driven tone alternators for tones matching Bell System

Esco tone alternators combine a drive motor and up to three permanent-magnet tone generators in a single frame. The alternators develop standard Bell System 500 and 600 modulated 120 cycle tones. An optional third circuit supplies a 420 modulated 40 cycle tone for ring back. What's more, with Esco motor-driven tone alternators, the same drive motor supplies driving power for the interrupters as well. This integrated design saves space and equipment and it means better balance and alignment, too.

As you would expect, Esco alternators feature permanently-sealed, precision ball bearings, protected construction, finest materials and workmanship, plus rigid tests and inspection throughout manufacture — they're made by specialists in rotary electrical equipment.

These are some of the reasons why Esco alternators give smoother, quieter operation and longer life — some of the reasons why so many equipment engineers and suppliers choose Esco. But get the full facts for yourself. Send for our free booklet on ESCO RINGING EQUIPMENT today.

Write today for full information

ELECTRIC SPECIALTY CO.
176 South Street, Stamford, Connecticut

XUM

GHI
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JKL
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• the most advanced dial in the industry – exclusively NORTH

Original equipment on NORTH'S N-541 telephone, this NORTH dial sets new standards in dependability, quiet operation and simplicity of adjustment.

The extended dial plate is easier to read — ends "wrong number woes."

The simple gear train is made without worm gears.

In the large diameter governor the braking shoes lead into the drum, resulting in a smooth and positively controlled revolution of the dial.

Both the pulsing and off normal springs have double contact points.

An outstanding feature of the NORTH dial is its constant pulse ratio throughout the life of the dial.

The dial mechanism is completely enclosed in a dust-tight plastic cover.

As with all NORTH equipment, the NORTH dial is engineered and manufactured to meet the exacting requirements of the progressive independent telephone industry.

NORTH ELECTRIC COMPANY

601 SOUTH MARKET STREET • GALION, OHIO

XUM

The *COMEBACK* that couldn't be

Since all occupants perished in wreckage of this house, it cannot be repaired or removed until an heir is located.

Mute witness to fury of the tornado, this truck was pierced by a telephone pole blown horizontally through body.

By GEORGE B. FORBES*

"I DON'T SEE HOW there can ever be a town here again," said a Red Cross worker, trained in the task of disaster relief but unabashedly shocked by the totality of destruction which leveled the town of Udall, Kansas, just a year ago.

When the tornado struck without warning on that fearful night in May 1955, most of the town was asleep. Pat Hurd, manager of the Udall Telephone Co. had called Mary Taylor, night operator, just as a matter of routine. His wife and daughter were in the car out in front of the house, planning vacation replacement schedules with a neighbor who was a "standby."

In one awful moment Pat Hurd was sucked into the basement of a home that exploded into matchwood, a power pole supporting heavy transformers knocked the front bumper off Mrs. Hurd's car in its fall, and Mary Taylor gave her life at her post of duty. In the eerie half light of the after-calm, those still remaining thanked God for life itself—it was all they had left!

Offers of help poured in—brought, in person, the last miles, because *all* communication had been carried away with the town.

Telephone companies — Independent and Bell shoulder to shoulder—relief agencies, long-term loan programs, suppliers of every type of equipment necessary for sustaining life—all sent what was needed without question of how repayment would be made.

Pat Hurd was just one of many who had lost everything; with him, as with the others, there was no hesitation about what to do. On May 25, 1956—one year to the day later—the new town of Udall stands four-square.

A ceremony attracting nationwide attention found the citizens bowed in prayer for loved ones lost, then standing firmly with their eyes forward to the better future they had already achieved.

*Mr. Forbes is publications editor of the Stromberg-Carlson Co., a division of General Dynamics Corp.

Typical of the friendly hand extended to Pat Hurd after the tornado, Mrs. Dorothy Thompson, former operator, volunteered to work at switchboard loaned by Southwestern Bell.

Engineering firm of W. E. Gault Associates, Gardner, Kan., effected XY dial program. From left: Merle Currant, Dorothy and Dean Moore; Carolyn and W. E. Gault, Mac Stevens.

View showing devastation visited upon Udall, Kan., by a tornado which struck one night about a year ago. The story of Udall's rebirth is a tribute to the helping hand extended by all Americans—including telephone people—when disaster strikes.

New churches, schools and homes; a new XY dial telephone office to serve them; and, in grim determination that disaster will never again strike without warning, a lookout tower manned day and night. The passing years will remove the last remaining ugly scars—Udall has been reborn.

The telephone story followed a fairly familiar pattern up until the day of the tornado. Like hundreds of other rural communities making up the heartland of America, plant and service were badly outmoded when Pat Hurd took over, five years ago. Line reconstruction and upgrading to common battery had just been completed when a crippling ice storm laid it all on the ground.

Martha and Pat Hurd relax for a moment after completing cutover of their dial exchange one year to the day after tornado.

To help carry the cost of replacement Pat took a job on the night shift at Boeing. It looked as though he'd be out of the woods by the end of July 1955, if all went well.

When the extent of the May catastrophe could be tallied, Udall for its size had suffered the worst tornado disaster toll in history. Stark reminders of the carnage are the twisted homes with boarded-up windows grotesquely standing because all occupants perished and no heirs have been found.

It's easy to spot parts of refrigerators or stoves up in trees; a truck looking like a gun turret where a telephone pole was carried horizontally through dead-center of each panel; repaired houses 50 yards from their original cellars, jacked up on beams while the new basement is completed.

But this isn't the *real* story of Udall, or of Pat Hurd's telephone company. The important thing is that town and company *have come back:* finer, stronger, better than ever. Never has the warm heart of America, the helping hand extended to the unfortunate, been more in evidence or more deeply appreciated. Udall's triumph is the shared triumph of everybody.

Telephone Time

Mr. Average Man, according to a detailed report, spends 8,760 hours on the telephone during his lifetime—one full year. Muses our Ohio correspondent: Wonder how much time the average woman spends on the telephone?

USITA Release Spotlights Growth of Independents

The United States Independent Telephone Association recently issued a release on the statistics and attainments of the Independent industry. The USITA stated that the 4,714 Independent telephone companies of America serve 11,000 communities and two-thirds of the geographical area of the country; they now operate 8,461,000 of the 56,490,000 telephones in the United States, its territories and possessions, and have a total plant investment of $2,042,833,000.

These figures, said the USITA, reflect the continuing growth and progress of the industry, which has been expanding at an accelerated pace during the past 10 years to meet the unprecedented demands for telephone service occasioned by population growth, increased usage, and a prosperous economy.

While the country's population increased 31 per cent during the 20-year period from 1935 to 1955, the number of Independent telephones soared from 3,185,000 to 8,461,000 or 166 per cent, the USITA said.

Audio Engineering Society Announces 1956 Convention

The 1956 convention of the Audio Engineering Society will be held on Sept. 26-29, in participation with the New York High Fidelity Show, which is sponsored by the Institute of High Fidelity Manufacturers, Inc. Both events will take place in the New York Trade Show Building.

Announcing these arrangements, Col. Richard H. Ranger, president of the society and of Rangertone, Inc., Newark, N. J., said, "Our board of governors has apporved a two-year contract with the Institute of High Fidelity Manufacturers. Since 1949 it was held concurrently with a different show. This change will further our organizations' cooperative advancement of the audio field."

The agreement with the institute was negotiated by Walter O. Stanton, president of Pickering & Co., Oceanside, L. I., who will be general chairman of the 1956 convention. Mr. Stanton is executive vice president of the society.

Topics to be covered at the AES convention will include: magnetic recording and reproduction; disc recording and reproduction; transistor application problems; audio systems and components; home music system design; loudspeakers, and audio standards and measurement methods. The annual banquet and presentation of awards will be held on Sept. 27.

XUM

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it's a **picnic** to work on!

Installation and servicing are easy...if you're working on Automatic's Type 80 Monophone!

The housing is an easy-to-remove shell with no wiring or components fixed to it. After you take it off, you hold the hook down by merely flipping a lever—no calls are lost, no switches tied up. Handy bayonet prongs hold the dial in place (and one twist frees it!) When it's removed, every part, every solderless terminal is *right in sight, easy to get at.* Your installer makes all adjustments—even ringer changes—without fuss or fumbling; he's done quickly and away he goes. You make substantial man-hour savings!

Maintenance men like Type 80 because it's so easy to get to—and because of its *freedom from trouble.* Subscribers like its clean modern lines, pleasant ring, and true-to-life transmission. Why not please everybody?—send your order in, today! Address:
Automatic Electric Sales Corporation,
1033 W. Van Buren St., Chicago 7.
Or call HAymarket 1-4300.

AUTOMATIC ELECTRIC

ORIGINATORS OF THE DIAL TELEPHONE

GENERAL SYSTEM

XUM

THE Plant Man's Notebook

BY RAY BLAIN, TECHNICAL EDITOR

THE writer always has been of the opinion that it is highly desirable for subscribers to dial into large PBX systems. The present practice, as we all know, is for the operator on the PBX to receive incoming trunk calls and complete them manually by plugging into the multiple and ringing, or by dialing the extension, usually through a connector jack multiple. On large PBX systems, if the caller does not know the extension number, he is connected to information.

We have repeatedly contended that this service can be handled more expeditiously and economically by dial. If the calling subscriber does not have the PBX extension number, he can dial a special information number that can be listed in the main exchange directory under the PBX listing.

There is no doubt that the present practice of requiring operators on large PBX systems to intercept incoming trunk calls and complete them manually is a carry over from the old days when PBX systems were small and the operator knew all of the extension numbers and was able to give secretarial service to everyone. In this case, it was never necessary to connect any incoming caller with information.

Conclusive proof that subscribers of a main exchange can successfully dial into large PBX systems and complete all calls without the aid of an operator was recently made available to the writer. The subscribers of the Anchorage, Alaska, municipal telephone system have had this type of service for more than a year and it has proved entirely satisfactory.

These subscribers dial all of their own numbers into Elmendorf Air Force Base and the army telephone system at Ft. Richardson, Alaska.

The information calls did not increase materially when the incoming dial service was initiated. One operator on the PBX systems of about 5,000 stations easily handles all intercept, information and dial assistance calls.

This service has proved entirely satisfactory and neither the subscribers in the City of Anchorage or the military installations would willingly agree to return to the old slow, unwieldy system of operator intercept and the manual completion of incoming PBX trunk calls. The dialing of main exchange numbers direct by PBX subscribers has been a common practice for years and there is no good reason why the dialing of incoming calls cannot be handled with equal satisfaction.

It has always been a mystery to us why people will agree that dialing subscribers across the entire United States is desirable, but to dial a number on a PBX in the same city is out of the question. There is no doubt that this thinking will all be drastically changed in our present era of automation.

•

According to the *Atlantic Coast Line News*, the efficiency, safety and speed of modern railway operations are dependent in large measure upon an adequate system of communications.

In the early days of railroading, when speed was not so important, railroads did operate without any of the communication devices such as are employed today. Meeting points of trains were fixed by timetable, and trains met and passed only at those designated points even if the arrival of one train at the meeting point was delayed several hours.

Such a delay was the incentive for Charles Minot, general superintendent of the Erie Railroad, to inaugurate the use of telegraphic train orders.

On Sept. 22, 1851, Mr. Minot, traveling on a westbound train, arrived at the timetable meeting point at Harriman (then Turner), N. Y. Learning that the eastbound train had not reached Goshen, 13 miles west of Harriman, he telegraphed the operator at Goshen directing him to hold the eastbound train there when it arrived until the arrival of Minot's train, which in the meantime would proceed westward.

This practice was soon generally adopted, and telegraphic train orders became standard procedure.

In the safe, efficient operation of today's passenger and freight trains—many of them on fast schedules—speedy, reliable communication is as essential as mechanical perfection of the train or the steel highway on which it runs.

The intense competition in today's transportation field also makes it imperative that shippers and passengers be rendered the acme of service, and this requires fast and dependable communication.

•

Stenciling of central office equipment is generally a slow and messy job and at present labor costs can prove rather expensive. Decals may now be procured at reasonable cost, which can be conveniently used to provide better identification of equipment than is possible with the old stencil method.

•

We recently inspected a new battery installation in a telephone exchange which made use of plastic cells and covers. These cells present an even better appearance than glass and we were advised that breakage in shipment is much less than either glass or hard rubber.

Operation and the condition of cells can be observed equally as well with plastic as with glass cells. In our opinion, plastic cells and covers possess numerous advantages for use in cells and storage batteries and undoubtedly will eventually come into general use.

•

In a hotel in which we stopped recently in Seattle there is a memo pad on the telephone stand that carries the following statement: "Turn the miles into smiles. Call home tonight."

they've *standardized* on C&D PlastiCal® Batteries

It's C & D—throughout all exchanges—for Northern Ohio Telephone Company. Monroeville, Carey, Grand Rapids . . . they all depend on C & D *PlastiCal* lead-calcium batteries for extra power, extra convenience, extra life.

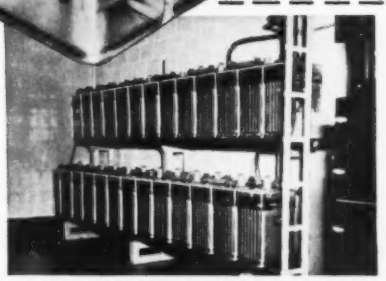
Northern Ohio chose C & D batteries on their service record. What better proof that it pays to specify C & D! With C & D batteries this telephone property gets all the advantages of—

1. One-piece, permanently-sealed plastic case. Entire unit is shock-resistant . . . lighter and more compact than glass or rubber.
2. More compact installations. With smaller dimensions for a given capacity, C & D's take up less battery room space.
3. Easier maintenance, because patented Post Seal eliminates acid creepage.
4. Lower shipping costs. Light plastic case reduces total in-place cost.

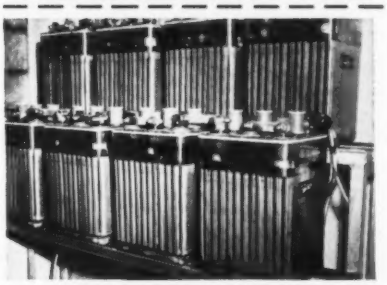
For C & D Batteries—consult your Equipment Supplier.

For details and specifications—write for Bulletin T-527 and T-528

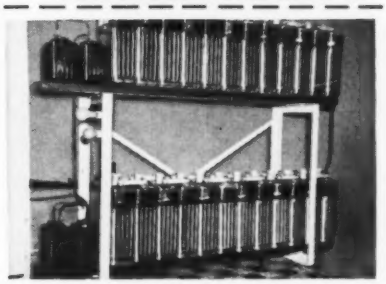
The C & D lead-calcium telephone batteries in the clear plastic jars. Life expectancy conservatively estimated at 25 years.



Carey



Monroeville



Grand Rapids

C&D BATTERIES, INC.

of Conshohocken, Pa.

INDUSTRIAL BATTERIES SINCE 1906

SALES AND SERVICE OFFICES IN PRINCIPAL CITIES FROM COAST TO COAST

XUM

Section 14 (Continued)

Table of Coefficients
Private Branch Exchange Switchboards
Base Coefficients

Class of Call Miscellaneous	Hotel Coef.	Other than Hotel Coef.
1. Extension to extension—extension or tie line to manual tie line	1.00	.90
2. Incoming to extension—other than department store	1.40	1.15
3. Incoming to extension—department store	—	1.65
4. Orders by telautograph	4.00	—
5. Morning calls	1.40	
6. Operator calls (dial)		.90
Outgoing to Manual Central Offices		
7. Local—passed by attendant	1.60	1.60
8. Calls passed by extension—attendant connects trunk	.90	.90
Outgoing to Dial Central Offices		
9. Local—dialed by attendant (4 pulls)	1.50	1.50
10. Calls—dialed by extension—attendant connects trunk	.90	.90
Toll	**Inc. T. C.**	
11. Toll board—attendant records and passes	15.00	10.00
Allowances for Operating Methods		
12. Receiving time and charges—toll board calls		3.00
13. Passing room number to toll operator	1.20	
14. Quoting charges	1.60	
15. Announcing calling party to called extension	2.50	2.50
16. Verifying calling or called extension —name against room number	1.40	
17. Ticket Work	.60	.60
18. Reference to exchange directory	4.00	4.00
19. Extension hang-up	3.70	3.70
20. Taking message	4.50	4.50
21. Deliver message	2.00	2.00
22. Each additional pull on dial calls	.11	.11
23. Completion to repeating tie line	.45	.45
24. Conference calls	*	*
25. Reference to PBX Directory	1.30	1.30
26. Paging calls	5.50	5.50
27. Timing calls	.40	.40

	Deducted from	Deducted from
28. Machine ringing	.07	.07
29. Individual busy signals and idle trunk indicating	.05	.05

Modification for Multiple Extension Line Lamps

	Coef. to Be Multiplied by
30. Lamps multiplied once—2 appearances	.94
31. Lamps multiplied twice—3 appearances	.90

See below for notes on basic coefficients.

PBX Switchboard Notes

Item 1. Includes calls disposed of by attendant without connection to an extension, such as requests for time of day, requests to be called and requests transmitted by attendant via telephone or memo slip for the calling party, such as calls for valet, laundry, etc. It further includes calls to information, chief operator, etc., as well as reporting some difficulty.

Items 2 and 3. Includes calls disposed of by attendant without connection to an extension; also each transfer of an original call to another extension.

Item 4. Covers calls to the attendant for valet, laundry, etc., which are transmitted by telautograph.

Item 5. Means calls to an extension made at a time specified to the attendant.

Item 6. Covers calls answered on attendant trunk, except those calls on which the details of a LD call are recorded and passed on (such calls are accounted for in the LD item). Count calls from "restricted extensions" which are completed over extension multiple (this call also counted as "outgoing dialed by extension"), but do not count as an outside call from "restricted extension" which is completed over the attendant trunk (such a call should be counted under "outgoing dialed by attendant").

Items 7 and 9. Count those calls on which the attendant dials or passes the number, also the attendant trunk calls (dial PBX) from "restricted extensions" to outside telephones, completed over either the attendant trunk or extension multiple if attendant passes or dials the number.

Items 8 and 10. Count each connection established to an outgoing trunk. On non-through supervision boards, outgoing calls can be transferred, each transfer being counted as an additional outgoing call.

Item 11. Count any call passed to LD by the attendant when she records and passes details of call. Also count any incoming LD collect call when attendant records details of call.

Allowances for Operating Methods

Item 12. Count when T & C are requested and then

If there is sufficient demand the Handbook will be reprinted.

recorded and quoted at end of conversation.

Item 13. Count when attendant passes room number to toll operator (Hotel counts only).

Item 14. Refers to calls from hotels.

Item 15. Count when attendant announces calling party to called extension.

Item 16. This item refers only to hotel counts.

Item 17. Tally those calls on which a ticket is written for the purpose of charging. *Do not count memorandum tickets.* Do not count tickets used to record LD calls—these are taken care of by Item 11.

Item 18. Count here each time the attendant refers to the outside exchange directory.

Item 19. Tally all calls where the extension user places a call through his PBX attendant and then hangs up, making it necessary for her to call him back to complete the call.

Item 20. Count those calls attendant places to extension user, advising him of a call he has received, to deliver a message, to pass him information he has requested, telling him he has a visitor, etc. *Count only those calls delivered by telephone.*

Item 21. Tally those calls on which attendant records a message on a form delivered by other means than over the telephone.

Item 22. Unless the larger percentage of telephone numbers are of either greater or lesser pull, and a note specifying this is placed on the back of the Peg Count detail sheet, credit will be given for a five-pull dial number.

Item 23. Applies to the operation of reaching an extension to another dial PBX by dialing the number over a tie line, using a separate front cord for dialing.

Item 24. No call shall be applied directly to this item. Count as an extension-to-extension call each extension connected to the conference hook-up. If the conference hook-up involves connecting an outside station, count each connection as an outgoing call, dialed or passed by attendant. If the conference hook-up is originated by an incoming trunk call, count each connection to an extension as an incoming trunk call.

Item 25. Tally each time the attendant refers to her PBX directory. Count also each time the attendant refers to her LD frequently called number directory.

Item 26. Comprehends all subsequent work incident to a paged call—such as transmitting to bell captain, giving subsequent and final reports and calls placed over an autocall or a public address system.

Item 27. Applies to those few cases where an attendant has instructions from her supervisor to time the conversation on LD or local calls.

Items 28 and 29. Any PBX having these refinements shall have deducted from the basic coefficient the amount shown.

Items 30 and 31. Modifiers are applied on the basis of the number of lamp appearances within reach of the attendants, with normal busy hour coverage of the switchboard.

NOTE: Generally a call counted "Allowance for Operating Method" will also be counted under one of the "Base Coefficient" items.

(Section 14 to be continued next week)

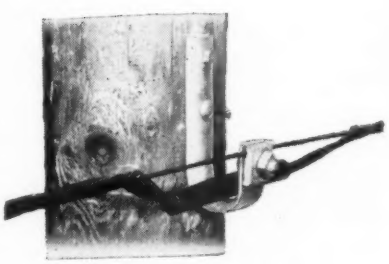
"HERE'S HOW TO ADD LINES FAST!"

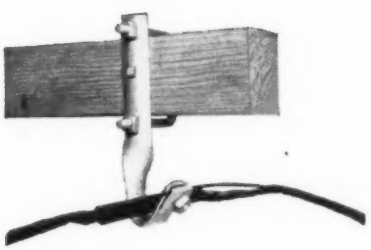
"Yes, sir — six or more telephone circuits — and they're all in one neat 'cable package.' It's simple and easy. Just *one* bracket is all that's needed—and it goes up fast. It's General Cable's new Rural Distribution Wire."

You can't blame telephone men for showing enthusiasm for this remarkable new product. General Cable first made it in six-pair size — but because of its rapid acceptance, it's now available also in one-, two- three- four- five- eleven- and sixteen-pair sizes.

Many telephone men feel this wire is the answer to two every-day problems: (1) low-cost expansion in sparsely populated areas, and (2) quick expansion in suddenly mushrooming residential areas.

If you would like more information about Rural Distribution Wire, why not contact your local Automatic representative or warehouse today?





As shown in these views, the "secret" of Rural Distribution Wire is in its high-strength steel core (1800 pounds test). This carries the load, and is readily attached to the pole or crossarm brackets shown above. The "B" bracket is used for attaching directly to the pole; the "C" bracket is used when attaching beneath crossarms.

For Splicing and Dead Ending Steel Core

Jaws of steel in the Wirelink (top) splice the wire core in a never-relaxing grip. Merely insert the wires in the ends 'til you hear a click.

The Wirevise (lower view) uses the same principle for *dead ending* the core; bail is easily secured around insulators and thimble eyes.

ADDRESS: Automatic Electric Sales Corporation, 1033 W. Van Buren St., Chicago 7, Ill.

AUTOMATIC ELECTRIC

ORIGINATORS OF THE DIAL TELEPHONE

XUM

construction and maintenance DIGEST

- **Easy dead-ends**
- **"Freeze" frequencies**
- **Block that bolt**
- **Profitable noise**
- **Insure your power**

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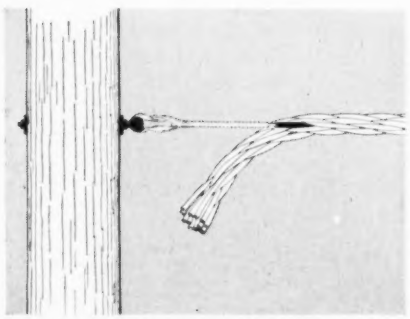
by C. J. Reynolds, Stromberg-Carlson Company

Two dividends are yours when you order supplies from Stromberg-Carlson. First, you get the protection of a double guarantee—ours and the maker's. This assures you of getting the finest products, backed by our 62-year reputation. Second, your support is used to further the art of telephony. We're knee-deep in this industry as a full-time job, not a side line, and your supply business plays a big part and helps us continue our research for new and better telephone equipment.

These dead-ends need no bolts

Your most inexperienced lineman, using the Preformed Dead-End, can make dead-ends faster and easier than an old hand using old-fashioned dead-ends.

No bolts, no special tools are needed. You eliminate costly loops, and your dead-end exceeds the strength of the wire or cable, even under sudden impact. It never relaxes its grip.



Available in galvanized steel, copperweld, stainless steel and bronze.

The Preformed Dead-End can be applied around an insulator, or inserted through thimble eye.

Available for self-supporting plastic cable, telephone line wires, rural distribution cable, and open wire. Call your Stromberg-Carlson representative.

Converter for harmonic ringing stops frequencies from creeping

Cross-ring in a harmonic ringing system can only be prevented when you find some way to nail down each of the five frequencies—16-2/3, 25, 33-1/3, 50 and 66-2/3 cycles.

If you have looked into this problem, you'll be pleased to know that there is a machine that actually does just that – pins down each frequency and **locks** it by a definite ratio to the 60-cycle input frequency.

This machine is the Lorain H-5 Sub-Cycle. It uses a special principle of operation, making it **impossible** for your ringing frequencies to creep out of line.

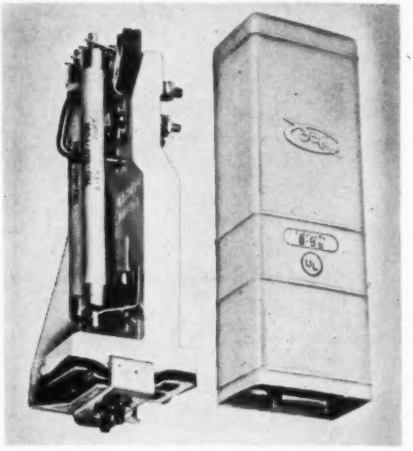
Add to this the fact that the H-5 Sub-Cycle provides exceptional voltage regulation—preventing ringing troubles—and you have a very useful machine indeed.

Lorain H-5 Sub-Cycle.

It's economical to operate, too—the H-5 Sub-Cycle has no moving parts, no expendable components. You just install it and forget it. And it requires only 1400 watts power at full load—slightly more than the full load requirement of a 1 H.P. induction motor.

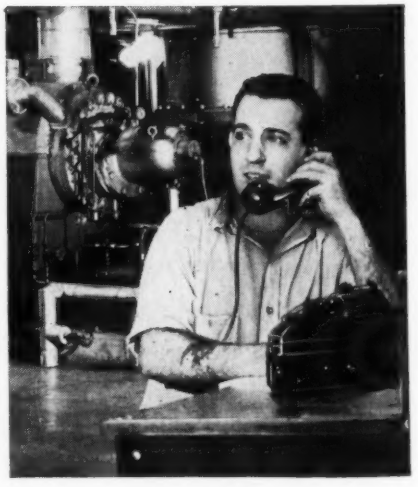
Protect telephones from lightning

No larger than a good-size candy bar is the Cook 09u telephone protector shown here. But it can save you a lot of grief and you can protect single circuits, both indoor and out.



Individual circuits are protected by small unit, measuring 6"x2½"x1¾".

The body is a single piece of heavy white glazed porcelain. Lightning arrestors are two Tru-Gap dischargers, two flat carbons mounted on a copper ground, and two A-9u 7-amp. lavite fuses. Neoprene gasket locks out insects, dust, snow, etc.



Noise can be money!

Take a business subscriber who has a telephone in some extremely noisy location—and who has finally decided to do something about it.

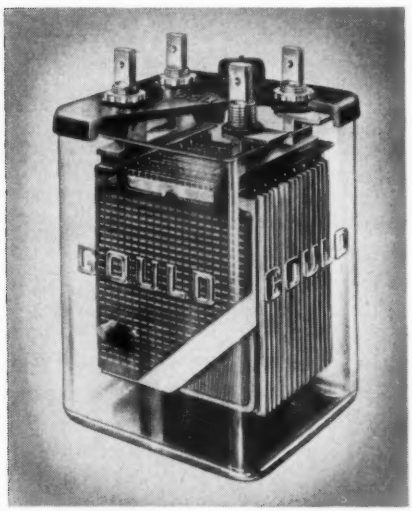
Would you rather have him spend money in building a soundproofed booth—or give you the money as monthly income on a telephone which completely licks the noise problem?

The GAI-PHONE is such an instrument. It has a special transmitter that actually creates a "Zone of Quiet" around the handset—even in a spot as noisy as a boiler factory! It costs the subscriber less than a booth—and you get the revenue!

Ask us for complete details.

Insure your power supply

Because Planté batteries practically last forever...providing standby power that never fails...they're the best operating insurance you



A sure, dependable supply of power when you need it. That, briefly, is the story of this Gould Planté battery.

can buy. In switchgear, signal and alarm systems, or emergency light and power applications, these lead batteries have rolled up amazing performance records . . . are famous for their ability to deliver a powerful surge or a steady flow of current the instant it's needed. Make sure you're in operation . . . always. Choose Gould Planté.

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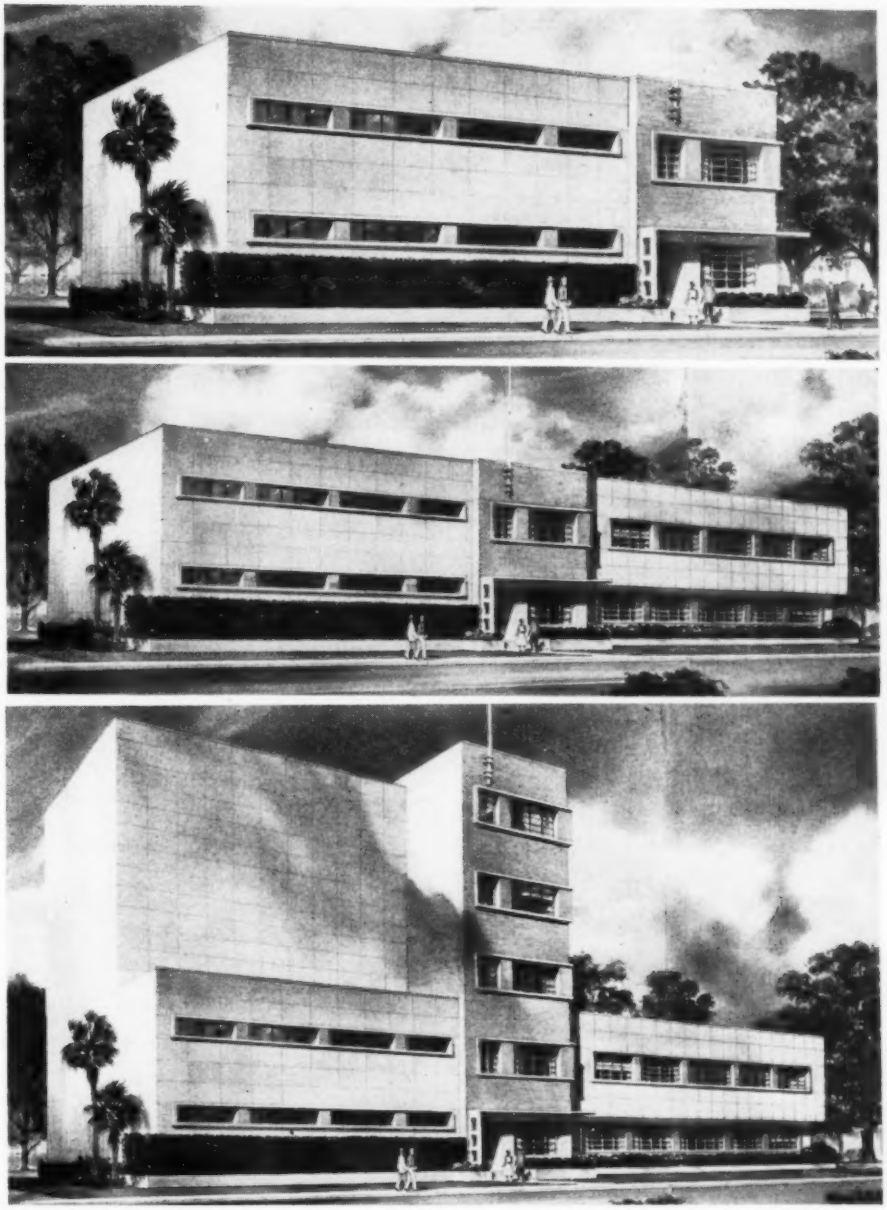

The long-range planning to meet the future increased demands for telephone service by the Winter Park (Fla.) Telephone Co. is reflected in the above three architect's drawings showing three proposed steps of expansion of the company's new central office building in Winter Park. The top photo shows the building which is now under construction, and which will be completed in the fall of this year. By September 1959 the company expects to have 5,500 lines of crossbar switching equipment installed and operating. The center photo shows how the building will look when an "expansion" wing is added to the right, and the bottom photo pictures the building when still more space is added to expand the plant.

Ohio Bell Puts Location Tags in Remote Area Booths

Motorists who run out of gas, have a flat tire, or for any one of a variety of reasons must call for assistance from an outdoor telephone booth in remote areas of northeastern Ohio, no longer will have to guess their location.

The Ohio Bell Telephone Co. has installed easily-read metal address tags in telephone booths where the location is not readily identified. The plaques are mounted directly above the coin telephone inside the booth within easy view of the caller.

When telephoning for a tow truck, ambulance or police, the stranded party can advise the person he calls of his exact location.

Especially in large metropolitan areas where the boundaries separating suburban communities might mislead a stranger, the new address plaques will clearly identify the location by street address and community as well.

XUM

Courts and Commissions

Ind. Circuit Court Upholds Independent's Plea to Serve

Judge William F. Dudine of the Martin County (Ind.) Circuit Court on June 4 ruled in favor of the Indiana Telephone Corp., Seymour, in a dispute over territorial jurisdiction with the Daviess-Martin County Rural Telephone Corp., a cooperative (TELEPHONY, Sept. 10, 1955, p. 32). The Indiana Public Service Commission had granted the territorial jurisdiction in question to the co-op.

The territory involved in the dispute was that on which the National Gypsum Co. and the U. S. Gypsum Co. plants are located, territory which the Indiana Telephone Corp. was serving.

The commission ordered Indiana Telephone Corp. to discontinue serving the territory at such time as the Daviess-Martin co-op was able to start serving the area.

Indiana Telephone Corp. filed suit on June 18, 1955, against the Indiana commission and the Daviess-Martin co-op.

Judge Dudine ruled that orders made by the commission on May 5, 1955, and June 2, 1955, were insufficient, unreasonable and unlawful in that these orders were contrary to findings of the Commission in the cause made and entered on May 5, 1955, in respect to the following findings:

Immediate telephone service in the disputed area and particularly to the industrial plants located therein was necessary in the public interest.

The Indiana Telephone Corporation was ready, willing and able to serve the disputed area.

The Daviess-Martin Rural Telephone Corp. was not able, ready or willing to serve the industrial plants in the disputed area for a period of some months.

Judge Dudine decreed that orders made and entered by the defendant commission on Nov. 4, 1955, and Nov. 23, 1955, were unreasonable and unlawful in that the orders were based upon insufficient, unreasonable and unlawful orders made by the commission on May 5, 1955, and June 2, 1955.

The judge also decreed that the said orders were made and entered by the commission after the Indiana Telephone Corp. had instituted this cause of action in the court to set aside and enjoin the enforcement of the said insufficient, unreasonable and unlawful orders of the commission.

The decision pointed out that public convenience and necessity required telephone service be rendered by the Indiana Telephone Corp. in the disputed area; that it was being serviced by Indiana Telephone on May 5, 1955, the date on which the commission denied the application of the plaintiff for a certificate of territorial authority in the disputed area—but the commission ordered Indiana Telephone Corp. to continue to "render service until Daviess-Martin Rural Telephone Corp. can furnish service. . . ."

Therefore, the court adjudged, ordered and decreed that public convenience and necessity required telephone service to be rendered in the disputed area by Indiana Telephone on May 5, 1955.

The court found that orders issued by the commission on May 5, 1955, June 2, 1955, and November 23, 1955, each of which was insufficient, unreasonable and unlawful, were adjudged null and void and are vacated and set aside.

The defendant commission was enjoined from enforcing or attempting to enforce said orders of the commission or any of the terms and provisions therein, or fines, penalties or punishment on account thereof.

The commission was enjoined from interfering or attempting to interfere with the Indiana Telephone Corp. in the telephone service.

The court decreed that Indiana Telephone Corp. should recover from the defendant commission the costs of this cause in court.

Ohio Commission Approves Company's Stock Dividend

It was reported on June 14 that the Chillicothe Telephone Co. has received authority from the Ohio Public Utilities Commission to issue a certain number of its no par value common shares as a share dividend on the basis of one dividend share for each 25 shares of common stock held.

Such dividend shares are to be charged against surplus and to have a stated value of $63. This will effect an increase in the stated value of common stock equity at the rate of $63 per share so issued, totaling $36,819.72.

Awarded Rate Raise in N. C. To Produce 6% Return

The Hickory Telephone Co. was authorized by the North Carolina Utilities Commission on June 14 to increase its rates sufficient to provide $50,612.83 in additional revenues annually (TELEPHONY, May 26, p. 54). The company had asked increases totaling $195,984.48.

The commission's order said the increase allowed would provide the company with a 6 per cent return on its investment, and increases requested by the company would have resulted in "considerably more" than 6 per cent, which it considered a fair return.

It said it had determined from the evidence that a fair value of the investment was $2,489,334 and that the $50,612.83 additional gross income would be ample to provide the 6 per cent return.

The company has exchanges at Hickory, Catawba, Valdese, Granite Falls, and Hildebran. The town of Valdese and the county of Burke protested the company's application.

New monthly rates approved by the commission are:

Hickory: Business—$7.50, one-party; $6.00, two-party; $4.50, four-party, and $4.00, multi-party. Residence — $3.95, one-party; $2.95, two-party; $2.20, four-party, and $2.20, multi-party.

Hildebran: Business—$7.50, one-party; $6.00, two-party; $4.50, four-party, and $4.00, multi-party. Residence—$4.25, one-party; $3.25, two-party; $2.50, four-party, and $2.25, multi-party.

Granite Falls and Valdese: Business —$5.50, one-party; $4.25, two-party; $3.50, four-party, and $3.25, multi-party. Residence—$3.50, one-party;

$2.50, two-party; $2.00, four-party, and $2.00, multi-party.

The four-party rate also applies for five-party service, but the company is gradually to change from five-party to four-party service and is not to install any new five-party service after next Mar. 1.

N. C. Company Asks to Pay 50% Stock Dividend

Concord Telephone Co. asked the North Carolina Utilities Commission on June 15 for permission to pay a 50 per cent stock dividend to its stockholders from surplus funds, and for authority to sell the Cannon Foundation, Inc., of Concord, 3,600 shares of class B non-voting common stock at $5.00 per share, and 3,200 shares of 5 per cent $100 preferred stock for $98 per share plus accumulated dividends per share.

Under the proposed 50 per cent stock dividend, each stockholder would receive one share of non-voting stock for each two shares of voting stock now held.

N. C. Company Authorized To Make Rate Adjustment

Linville Telephone Co. was authorized by the North Carolina Utilities Commission on June 15 to increase rates to bring in an additional $3,706.

In its order, the commission said the company, which has expanded and improved service in the past few years, needs the extra income to earn a fair rate of return on its investment.

The new rates for residence customers will be $5.50 for one-party service, $4.50 for two-party, $4.00 for four-party and $3.85 for multi-party service. The present residence rates are $4.50, $3.50, $2.75 and $2.75.

New business rates will be $9.00, $6.50, $5.50 and $4.50. The present business rates are $6.75, $5.25, $4.25 and $4.00.

N. C. Company Asks to Sell Bonds, Make Stock Split

Western Carolina Telephone Co. applied to the North Carolina Utilities Commission on June 11 for permission to sell $500,000 worth of first mortgage bonds and to split its stock two-for-one.

The bonds will bear 3⅞ per cent interest and will mature in 1981. They will be sold, the company said, to Berkshire Life Insurance Co. of Pittsfield, Mass., and Connecticut General Life Insurance Co. of Hartford, Conn., which own the first mortgage the company issued in 1954.

The proposed stock split will involve

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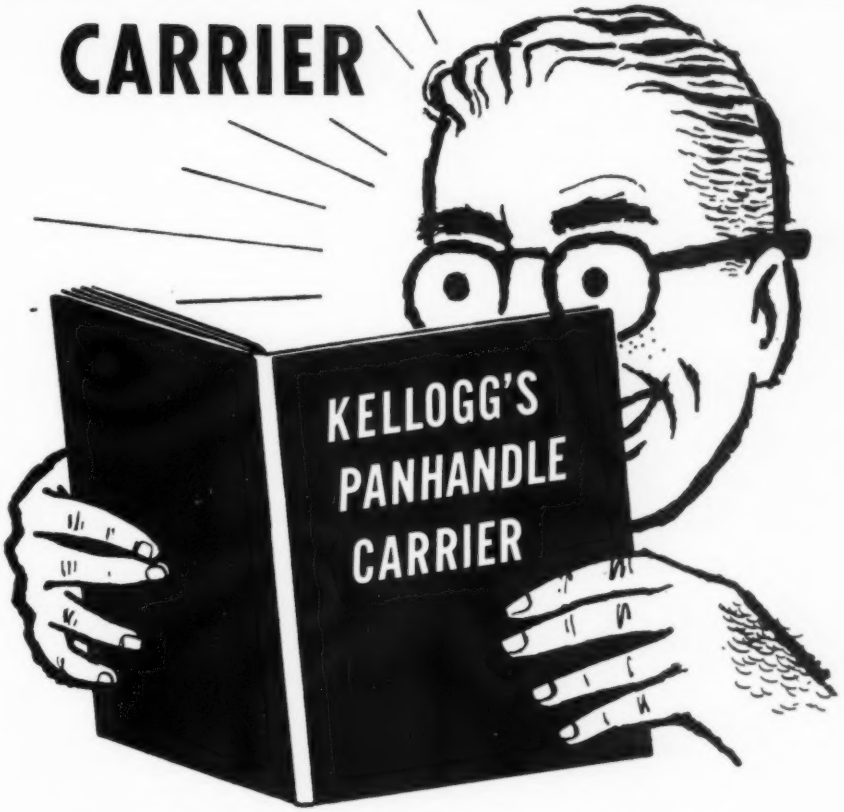

It contains information about the 10 channels per circuit, the adaptability to all types of ringing, the automatic regulation, the plug-in units, etc.

You'll find it interesting reading. It's packed with information that will help you to increase subscriber satisfaction and get more revenue from your existing facilities.

For technical details and application information, use this coupon to request the new Kellogg Panhandle Carrier Bulletin #5605.

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increasing from 300,000 to 600,000 the number of authorized shares of common stock, dropping the par value from $10 to $5.00 per share and giving stockholders two shares of the $5.00 par stock for each share held.

Indiana Company Granted Increased Rate Schedule

A $54,860 annual increase in rates paid by customers of Southern Indiana Telephone Co., Aurora, was authorized by the Indiana Public Service Commission on June 8.

A new rate schedule will be determined later.

Illinois Bell Purchases Independent Exchange

Purchase of the San Jose exchange of the Forest City Telephone Co. by Illinois Bell Telephone Co. was approved on June 7 by the Illinois Commerce Commission (TELEPHONY, Apr. 28, p. 62).

The commission authorized Illinois Bell to buy the San Jose exchange from Roscoe Smith, owner of both the San Jose and parent Forest City exchanges.

The latest transaction is part of an arrangement begun in April when the commission authorized Middle States Telephone Co. to buy the Forest City exchange from Mr. Smith.

Minn. Independent Gains Increased Rate Schedule

Winthrop Telephone Co. on June 8 secured a schedule of increased rates from the Minnesota Railroad & Warehouse Commission. Rates were approved to cover wage increases to establish a $1.00 minimum wage (stipulated in the 1955 amendment to the Federal Fair Labor Standards Act) and other anticipated increases in expenses and taxes.

The newly authorized rate of return (3.39 per cent) was figured on a rate base of $106,667, and will be realized on net operating revenues of $36,508 and net operating income of $3,613.

Buys Two Independent Exchanges in Iowa

A. W. Sanders, vice president and general manager of the Iowa-Illinois Telephone Co., New London, Iowa, on May 24 reported the purchase of the Salem Telephone Co. from Arlo Foss; also the purchase of the Libertyville, Iowa exchange.

The Salem company served 300 patrons, and the Libertyville exchange 325.

Four REA Employes Receive Service Awards from USDA

Four employes of REA received Superior Service Awards from the U. S. Department of Agriculture on June 5 at the Annual Honor Awards ceremonies. The employes were Ann L. Hoffelmeyer, Robert D. Partridge, John G. Hieber and Robert E. Turner. Each had previously received a cash award from REA for sustained outstanding service.

Miss Hoffelmeyer, a telephone loan appraiser, received the award for her work in initiating and developing simplified procedures for handling rural telephone loan applications. She formerly lived in St. Joseph, Mo.

Mr. Partridge, also a native of Missouri, is program analyst for REA, and recently has worked closely with the Atomic Energy Commission in connection with its program for small-scale experimental nuclear power plants. He was honored for his accomplishments in planning and analyzing REA programs to meet the needs of farmers, and in coordinating his agency's work with programs of other government agencies.

Mr. Hieber, transmission systems engineer, received the award for his handling of complex operating problems of rural electric systems, and for his contributions to the development of a transmission line manual. Hieber was born in Illinois, but spent much of his early life in Alabama.

Mr. Turner, originally from Towanda, Pa., but now of Cedar Rapids, Ia., is REA operations field representative in Iowa, Illinois, Wisconsin, Minnesota, and North and South Dakota. His award was for developing programs to stimulate wider and more effective use of electricity on farms.

Iowa Company Incorporates

The incorporation of the Henry County Telephone Co., New London, Iowa, with $75,000 authorized capital, was reported on May 31. A. W. Saunders was listed as president; Donald J. Bell, vice president, and C. F. Eickler, secretary-treasurer, all of New London.

Asks to Buy Four Companies

The Public Service Commission of Wisconsin was scheduled to hear on June 22 the application of Citizens Telephone Cooperative, Inc., to buy the properties of the New Auburn, Canton, Dover and Chetek Farmers Telephone Cos.

GET MAXIMUM USE OF YOUR 4-WHEEL DRIVE!
New!
WARN LOCKOMATIC HUBS
LOCK
WARN LOCKOMATIC
FREE
New Convenience with AUTOMATIC FREE-WHEELING 2-WHEEL DRIVE and AUTOMATIC 4-WHEEL DRIVE forward and reverse AS YOU SHIFT!
Plus "Locking" controls for 4-wheel drive engine braking control safety.
Stop front-end drag in 2 w. d.!
Warn Hubs make your 4-wheel drive doubly useful—the only service vehicle you need! Use it as a conventional "free-wheeling" 2-wheel drive most of the time; as a 4-wheel drive whenever you need it. Warn Hubs "take out" the front drive in 2-wheel drive, stop drag, front gear whine, shimmy—give your vehicle new economy, pep, speed, handling ease. And, when you need 4-wheel drive, you have it automatically, with Warn Lock-o-matics, manually with Warn Locking Hubs. Keep track of one day's driving—you'll find 2-wheel drive is enough most of the time. That's where Warn Hubs save gas, gear wear, tires. Available for all makes of 4 W.D.s to 1½ tons. See your dealer, today, or write:
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Line service. Good roads, bad roads or no roads, the extra traction of the Universal 'Jeep's'* 4-wheel drive takes crew and equipment where the line leads, to handle line failure or weather emergencies. It climbs grades as steep as 60°, goes where other vehicles can't go.

Trenching. The 'Jeep'-propelled trencher digs up to 800 feet of clean-cut trench per hour, to speed the installation of cable, conduit and service lines. Travels at highway speeds between jobs.

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Whether carrying construction crews with equipment or hauling service trailers, 'Jeep' vehicles work 'round-the-clock, in good weather or bad, in many phases of telephone industry service.

Go-anywhere 'Jeep' transportation helps assure uninterrupted customer service. In emergencies, the extra traction of their 4-wheel drive carries men, tools and equipment through mud, sand, soft earth or up steep grades to get to the line in a hurry, or to go wherever needed when storms or other emergencies threaten service. On the highway, 'Jeep' vehicles travel in conventional 2-wheel drive at top legal speeds.

For hundreds of different jobs, from underground cable installation to line clearance, rugged 4-Wheel-Drive 'Jeep" vehicles serve the telephone industry. Ask your Willys dealer for a practical on-the-job demonstration today.

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**Model CJ-5 shown*

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IN THE NATION'S CAPITAL

Concluded from page 20

more grumbling in the next Congress about how TVA expects to raise money to fill constantly increasing demands for expansion of power plant capacity. Up to now all the rapidly growing cities in Tennessee have been enjoying bargain rates for an electric supply provided by the tax-supported TVA. Congressmen from other areas are beginning to wonder when and where the line is going to be drawn on future TVA power plant commitments.

The ill-fated Dixon-Yates contract was one attempt to turn this problem back to the providence of private enterprise. Then, the city of Memphis decided to go it alone on a home-rule basis. But the general problem of financing TVA expansion is still far from settled. It is a problem which inevitably intrudes when a national government undertakes to furnish unlimited utility service, as a government function, for local consumers.

Vacations with Pay

Public utilities lead other industries in vacation-with-pay benefits, according to a recent study by the government's Bureau of Labor Statistics. It covered vacation arrangements among some 5.5 million union and non-union workers. It showed that two-week vacations are available for 26 per cent of workers after a single year of service. Another 24 per cent get the two weeks' vacation after only two years' service. It takes three years for 19 per cent of the workers covered in the study to get two weeks' vacations.

In short, some 69 per cent of the people in a representative and very large sampling of American industry now get two weeks' vacation after three years of service or less. But the move toward more liberal vacation privileges has not been even and identical in all localities and all industrial lines.

The AFL-CIO in a recent issue of its "Collective Bargaining Report," working from the government figures, say that the trend had been fastest in several of the big West Coast cities, like San Francisco, Los Angeles, though Portland, Ore., lags. The industries whose people vacation most generously are aircraft and public utilities.

In the Atlantic region, Boston and New York City lead in vacation privileges, but places like Buffalo and Philadelphia are behind. Industrial lines making up what might be called a less-forward group in their vacation arrangements include autos, steel, meat packing, and electrical equipment manufacturers.

The southern and border cities offer a mixed pattern on vacation time, but the AFL-CIO people place Baltimore with Atlanta and Dallas as cities with progressive vacation arrangements.

Midwestern Cleveland lags noticeably, but midwestern Chicago is up at least to the average. In Chicago and elsewhere, in brief, if Jack is still a dull boy nowadays you cannot always blame it on overwork.

Frank Woods Chapter ITPA, Elects New Officers

Myra Metcalf of Lincoln, Neb., was elected president of the Frank H. Woods Chapter, Independent Telephone Pioneer Association, at the chapter's annual reunion on June 2 at the Cornhusker Hotel. She succeeds W. Kent Eno of Lincoln.

Other officers elected are E. H. Royce, vice president, Melba Richards, secretary, and Clara Jones, treasurer, all of Lincoln. Elected to the executive committee were R. D. Andrews and Mina Jorgensen of Lincoln.

At the annual meeting, Eno reported an all-time high in membership of 521, a net gain of eight since June 1955. Over 300 telephone men and women representing some 20 telephone companies in the state were in attendance.

Obituary

E. F. WOODWARD, 67, general commercial superintendent of Northern Ohio Telephone Co. for the past 23 years, passed away on June 10. He had been ill since last September.

Mr. Woodward had a long career in the telephone industry, working in his early youth with the Washington Court House (O.) Co. Later he was employed by the Newark (O.) Telephone Co. during the years he was at Dennison University. Upon graduating there, he became associated with the Kellogg Switchboard & Supply Co. where he remained until 1933, when he accepted the position of general commercial superintendent for Northern Ohio Telephone Co.

He is survived by his widow, Elizabeth; a son, John, of Cleveland; two daughters, Mrs. William Tinsley, Quantico, Va., and Mrs. James Rea, Auburn, N. Y.; a sister, Mrs. J. Rankin Paul, Washington Court House, O., and 10 grandchildren.

"Weren't we lucky, Betty, that we picked a KOPPERS POLE? Look how it's lasted!"

Koppers Poles are famous for the way they last. Specify Koppers Pressure-Treated Poles for long, trouble-free service. Koppers Company, Inc., Wood Preserving Division, Pittsburgh 19, Pennsylvania.

KOPPERS

PRESSURE-TREATED POLES

REA LOAN ALLOCATIONS

Concluded from page 21

The two loans to this borrower total $259,000 with which it will furnish modern service to 461 farm families and other rural residents over 125 miles of line in Talbot County.

T. J. Battle is president and manager of The Utelwico, Inc.

*

Eastex Telephone Cooperative, Henderson, Tex., on June 8 received an allocation of $250,000, third loan. The borrower plans to expand its territory into Harrison County to provide new and improved service to 442 farm families and other rural residents. This includes 124 families who now have no telephones. The company plans to acquire the Waskom Telephone Co., now furnishing automatic service to 318 subscribers over 17 miles of line.

Since the present automatic switchboard at Waskom is now filled to capacity, the borrower plans a new central office building. About 34 miles of new line will be added and all of the present line will be used in the expanded system.

The three REA loans to Eastex total $956,000. They will enable it to furnish new and improved service to 1,842 subscribers in Harrison, Panola and Rusk counties. The system will consist of 540 miles of line and nine exchanges. The Goodsprings, Laneville, Pine Hill, Minden and Mount Enterprise exchanges are in operation.

Otho Morris is president and C. R. Collins is manager of the Eastex cooperative.

*

Colton (Ore.) Telephone Co. June 8 was allocated $111,000, to improve and extend rural telephone service in Clackamus County.

The new borrower, a commercial corporation, plans to convert its existing system to automatic operation and to add facilities to serve 173 farm families and other rural residents. Presently, the Colton company is furnishing magneto service to 111 rural subscribers over 30 miles of line.

The borrower proposes to construct a new automatic central office and headquarters building at Colton and 27 miles of new line. About 15 miles of the borrower's present line will be rebuilt, 12 miles used in place.

Alvin L. Edwards is president and W. A. Swain is manager of the Colton Telephone Co.

All-Inclusiveness Decried

"Perfect reason avoids all extremes."
—MOLIERE.

toll calls
TIMED TO THE SECOND
Automatically

This is the ultimate in modern, dependable and accurate computing of all toll calls TIMED TO THE SECOND. And what's more it's all done *automatically*—no need for operators to do it manually.

Just a flick of a lever, and Calculagraph computes, prints and records ELAPSED time of toll calls, thus eliminating human errors and allowing every operator to handle more calls—and more calls mean more dollars to you.

For time-saving operation, for dependable accuracy, for greater toll-call volume, install Calculagraphs on your switchboard. Investigate this model 33 shown here (others available according to need) and see for yourself what CALCULAGRAPH can do for you.
Don't delay, write today for catalog to Dept. T.

931 Photograph courtesy Lincoln (Neb.) Telephone and Telegraph Co. and Automatic Electric Sales Corp.

CALCULAGRAPH Company
HARRISON, N. J.
THE STANDARD OF ACCURACY SINCE 1892

XUM

The new $15,000 modernistic office and equipment building recently occupied by the Public Service Telephone Co. at Montrose, Mich., features one of the first "drive-in" telephone business offices in Michigan (left photo). Customers may transact business and pay bills without leaving their cars if they so desire (right photo). The cashier's desk is so situated that employes may handle business either at the counter or at the "drive-in" window without changing their positions. The new building is designed to match local architecture. In addition to its construction, the company placed an additional 3,732,960 conductor feet of new cable and increased the number of telephones in service from 727 to 835—a gain of 14.8 per cent during the year—at an estimated cost of $40,000.

SRA Head Lists Hallmarks Of Good Executive

Company presidents worry more about developing a top management team than on any other business problem, Lyle M. Spencer, president of Science Research Associates, recently told members of the Manufacturers' Association of Racine, Wis., at an association luncheon.

Spencer, who talked on the subject "Better Ways of Building Top Management," said, "The key difference between owning a company and running a profitable business lies largely in the success a president achieves in organizing an effective, functioning team of top executives. Finding, training, and motivating the key executives, through whom a president must accomplish his work, is the thorniest and longest-lasting problem he faces."

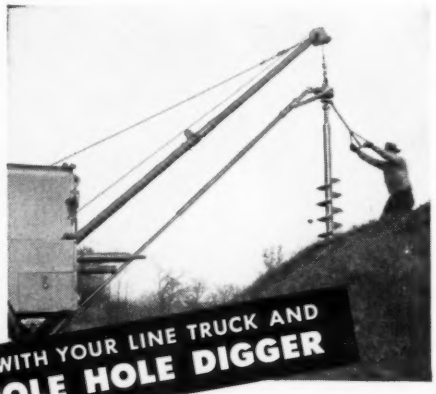
Spencer listed this as one of the key findings from a research study conducted by the Young Presidents' Organization, a group formed six years ago and comprised of men and women who became presidents of their concerns before reaching the age of 40. The club, limited to chief executives whose companies employ 50 or more workers, and whose annual sales volume is one million dollars or more, has over 1,000 members throughout the United States. Last year YPO companies were responsible for more than 6.9 billion dollars worth of business.

Spencer said that a rule-of-thumb method to enable company presidents to organize and motivate their key executives more effectively has been developed from the findings. He continued, "As a result of the survey, four outstanding characteristics of a good executive emerged from the source material. They are:

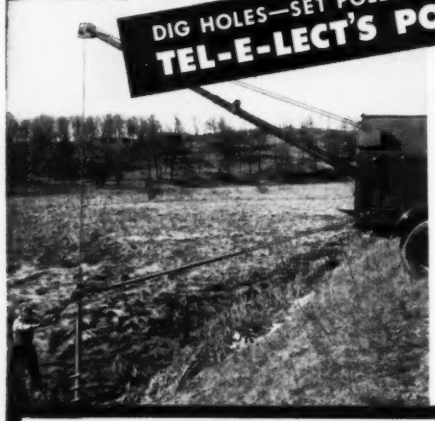
"(1) The members of a good executive team possess remarkable flexibility.

"Regardless of their training and experience within the company, they are receptive to new ideas, able to adapt themselves quickly to changing conditions, and can withstand setbacks without losing their drive and enthusiasm.

- Reaches hard to get at spots
- Bores holes up to 10 feet deep from any truck position
- Low cost—easy to use—easy to transport
- Industry tested and accepted



DIG HOLES—SET POLES WITH YOUR LINE TRUCK AND
TEL-E-LECT'S POLE HOLE DIGGER



When your derrick truck is equipped with a Tel-E-Lect Digger, your crew can dig a hole and set a pole in less than five minutes! This rugged auger, suspended from a front or rear mounted derrick, is raised or lowered by the winch line. Auger rotation power is supplied through a telescoping drive shaft connected to the PTO.

This efficient digger reaches up on a hill, down into ditches, or across obstacles . . . anywhere up to 20 feet behind the truck. The interchangeable hardened steel augers, 8″ to 20″ in diameter, are built to operate under the most rugged soil conditions.

Tel·E·Lect PRODUCTS, INC.
10,007 Minnetonka Boulevard Minneapolis 26, Minnesota

"(2) A good executive team has depth.

"The temporary absence of one member of the team limits the organization and perhaps decreases its efficiency, but it does not leave the company paralyzed.

"(3) The members of a good executive team each build their own efficient division of the company with a minimum of routine supervision.

"The executive team members and their divisions are in a state of healthy rivalry with each other.

"(4) The executive team functions by balancing and controlling two impulses which are in essential conflict with each other.

"On the one hand, there is a desire for maintaining, improving, and continuing the status quo, for preserving the business and for correcting the things that hamper the present functions of the business.

"The second impulse which drives the executive team is the impulse toward growth, toward developing new products, new markets, new kinds of business enterprises more profitable than the ones the company already has."

Spencer also said that the executive teams of most companies are surprisingly small. "They usually include only three or four persons besides the president; an administrator, who serves as the president's alter ego and keeps the company's day-to-day operations running smoothly; a sales manager; a production chief; and a financial officer who manages the company's capital. Other business posts rarely achieve top ranking in a company's inner circles."

If all the attributes and statistics were put together to form a composite key executive, Spencer said the "average" would look something like this:

"(1) He is currently holding a job that carries more responsibility than any job he has previously held.

"(2) More likely than not, he has come up from the ranks within the company.

"(3) He has less education than his president and he feels defensive about it.

"(4) He is older than the president although he has held his present post for only three years.

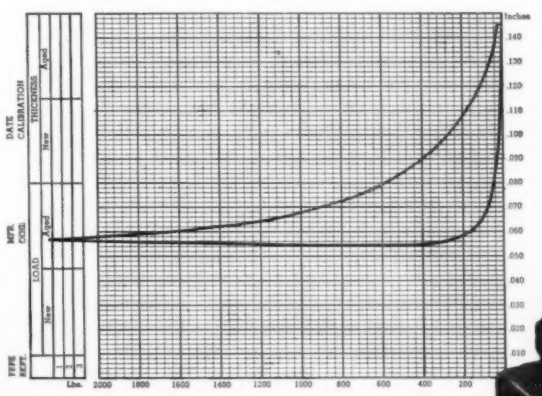
"(5) Planning ahead, he looks forward to making a long-time career in his present company. Although he knows the chances of his becoming president are small, he is ambitious to expand the scope of his present job by helping his company to grow.

"(6) . . . Although he has succeeded in the business world faster than he expected to, he expects to earn a materially greater amount in the future, and the chances are one in three that he is actively dissatisfied with his present income."

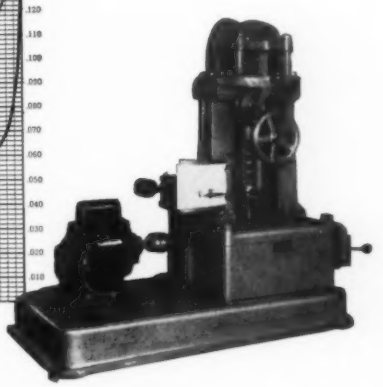
Spencer said that the basic reward that the executive receives for his good performance on the job is his own feeling of personal satisfaction and his feeling that he has gained the esteem

No. 1 in a series of test results on LOWELL TELEPHONE WIRES: Resistance to Compression

In determining the ability of a drop wire to stand up in service, resistance to compression is a major factor. All Lowell parallel neoprene jacketed drop wire is tested in our laboratory to withstand pressure of 2000 lbs. or more before the insulation jackets are crushed. To insure this high resistance to compression, all conductors are brass flashed and special insulating and jacketing compounds are used. Since resistance to compression determines the quality of the adhesion these tests prove that Lowell Drop Wire will stand the crushing action of the P Clamp without cracking of the insulation or jacket, thus insuring dependability and long life in service.



Typical test for Lowell LND18PD2 No. 18 AWG Dumbell design parallel wire, illustrated showing minimum resistance to compression of 2000 lbs.



COMPRESSION TESTER — tests and records resistance to compression of plastic or rubber insulation jackets.

Write today for Lowell Insulated Wire Catalog or mention your wiring needs.

"Fine Wires Only"

LOWELL INSULATED WIRE COMPANY

171 LINCOLN STREET ··· LOWELL, MASSACHUSETTS

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TAKE A BIG STEP TOWARD SAFETY WITH DUO-SAFETY LADDERS

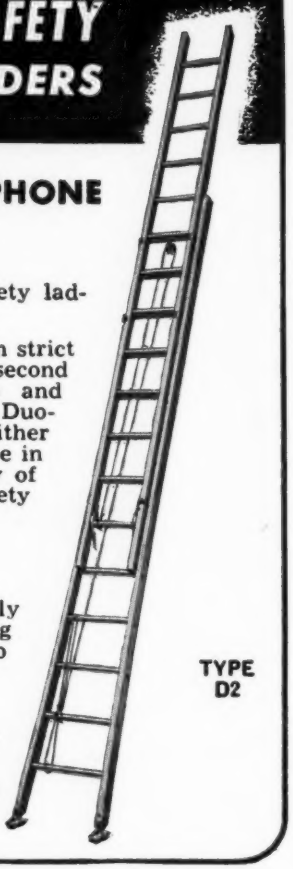
... CUSTOM DESIGNED FOR TELEPHONE MAINTENANCE WORK!

Here's one fine example of the many Duo-Safety ladders ideal for telephone maintenance work.

Type D — a truly great extension ladder built in strict accordance with safety regulations. Rungs are second growth hickory, reinforced with steel rods and equipped with special automatic locks and Duo-Safety's famous Safety Shoes. Made with either straight or parallel side rails, Type D is available in one, two or three sections — in a large variety of sizes. Write for free catalog on all Duo-Safety ladders.

IMMEDIATE DELIVERIES!

Duo-Safety ladders will be shipped immediately upon receipt of order! A planned stock-piling program assures really fast action — there's no delay the Duo-Safety way!



TYPE D2

For Information, Contact Your Supply House, or

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CONTINUING IMPROVEMENTS IN THE
Murphy "ONE-MAN" Cable Tester

MODEL TTB

MODEL CMUW

ONE MAN WORKING ALONE

Can Now Identify Non-Working Cable Pairs 3 times faster than 2 men working together.

DISTANCE:
2 feet to 40 miles

The Combination Tag-and-Terminating Board, showing cable pairs properly connected. Tips — Horizontally, RINGS—Vertically.

The NEW MODEL CMUW
The new weatherproof gasket sealed case is now a part of every MODEL C shipped.

WE SELL DIRECT ONLY TO DOMESTIC CUSTOMERS
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4419 Tulsa — Houston 24, Texas

and respect of his fellow executives, the president, and his subordinates. Most executives crave these satisfying experiences of accomplishment. They need to respect themselves and have the respect of their fellow workers.

"Most key executives have a sneaking suspicion that they are really not quite good enough for their present jobs," Spencer observed. "Their continuing need to reassure themselves about their own competence is a major factor in maintaining the drives that produce business accomplishment."

Insulated Power Cable Group Adds Two Sections

The Insulated Power Cable Engineers Association (IPCEA), which has since 1925 developed standards for many types of insulated power cable, recently announced a broadening of its field of activities by the addition of two new Sections.

These Sections and their respective scopes are:

(A) *Communication Cable Section* whose scope includes the design, construction, testing and application of insulated cables used in the field of communication such as:

Dispatch and patrol cables.
Fire alarm cables.
Inter-communication cables.
Police signal cables.
Supervisory control cables.
Telemetering cables.

(B) *Bare and Covered Overhead Conductors Section.* This Section is concerned with the consideration of all matters in which the dominant factors are the design, construction and application of bare and covered overhead conductors used in the transmission and distribution of electric power.

Included in its scope are:

Sag-tension charts.
Conductor application data.
Current-carrying capacities.
Conductor design.
Code names.
Reels.

The address of IPCEA's secretary is 283 Valley Rd., Montclair, N. J.

Zook of REA Attends World Power Conference in Vienna

Roy G. Zook, REA assistant administrator (electric), was to attend the Fifth World Power Conference at Vienna, Austria, on June 17-23, as a representative of the U. S. Department of Agriculture.

More than 50 countries will send some 3,000 delegates to the conference. They will consider "World Energy Resources in the Light of Recent Technical and Economic Developments."

Mr. Zook is a member of a 19-man official delegation from the United States, headed by Gale Hathaway of the Army Corps of Engineers.

ONE-MAN IDENTIFICATION

Concluded from page 23

identify correctly with its place in the tag board. If, however, a pair is tested which gives a meter indication of one pair number on the meter but is shown as a different pair on the tag board, a trouble condition would be indicated. This trouble would be corrected before work proceeded, and thus a wrong identification would not become a permanent error.

When the terminal board is thus properly connected up and tested out, the splicer may then proceed to the other end of the cable. The tracer pair which connected to the zero post on the terminal strip is found and connected to the meter, tip and ring. Like other similarly numbered posts on the terminal board, these posts are shorted together. The meter then will measure the resistance of the cable between the splicer's location and the location of the terminal board.

A potentiometer on the meter can then be adjusted to bring the reading of the meter back to zero. This, in effect, cancels out the resistance between the two ends of the cable.

When ready for use, the meter is connected with one side to the tracer pair and the other side to the tip or ring of the pair to be identified. The meter probe, unaffected by the resistance of the cable, measures the fixed resistors at the distant terminal board.

The meter scale then indicates the correct pair number.

Additional features of the one-man cable tester are a straight ohmmeter function and a buzzer feature which can be selected by a switch on the front of the instrument.

"If we laid all these holes end-to-end, we could put in an underground cable."

This Compact
Mighty Midget Puller

weighs 9½ lbs., can lift or pull 1,000 lbs.* with 40 lbs. of effort!

If severely overloaded, "safety valve handle" will bend before any other part of puller fails. All are factory tested at 50% overload.

The handle can be operated as crank for speed lifting or as lever for short pulls in cramped quarters.

Fast, safe, powerful, lightweight, compact, inexpensive—the Coffing Mighty Midget Puller enables one man to do the work of several for most lifting, pulling, stretching, tightening jobs. Ask your recognized distributor or write for bulletin ADH-40, Coffing Hoist Division, Duff-Norton Co., 808 Walter St., Danville, Illinois.

**Also available in 500 lb. capacity model weighing but 6½ lbs.*

Coffing tools are standard equipment with more than 86% of all utility companies.

COFFING HOISTS

be on the ALERT

when it is so easy to install
SIGNAL
Telephone Ringing
RELAY SETS and accessory
SIGNAL
Equipment

Immediately Available **FOR CIVILIAN DEFENSE**

These Relay sets have already been installed in many leading communities for operation of Civilian Defense Alarms.

The WHEELOCK Relay Set can be installed quickly and easily. It is designed to operate on standard telephone ringing current of 15 milliamperes at 90 volts, 20 cycles.

The Telephone Ringing Relay Set has been proved in service and is of the same high quality which characterizes all relays, devices, and control systems built by Wheelock Signals, Inc.

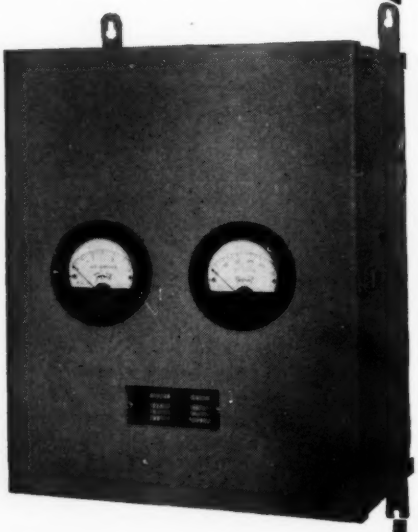
Sales Representatives in Principal Cities.

Signal Engineering & Mfg. Co., has changed its name to
Wheelock SIGNALS INC
RELAYS W S LONG BRANCH, N. J.

Write for Catalog TR-4

Dependable Power

for Years-
and Years-
and Years-
of Service!



SCHAUER
ELECTROX
BATTERY ELIMINATORS
BATTERY CHARGERS

In sizes and capacities to meet every telephone power requirement.

See your Schauer Jobber.
Write for Bulletin 1465.

RECTIFIER DIVISION
SCHAUER
MANUFACTURING CORP.

4514 Alpine Ave. Cinn. 36, Ohio

Inspection of Poles Assures Buyer of Quality Product

For more than half a century the wood preserving industry has been instrumental in protecting billions of cubic feet of wood going into uses as poles and crossarms for the telephone industry.

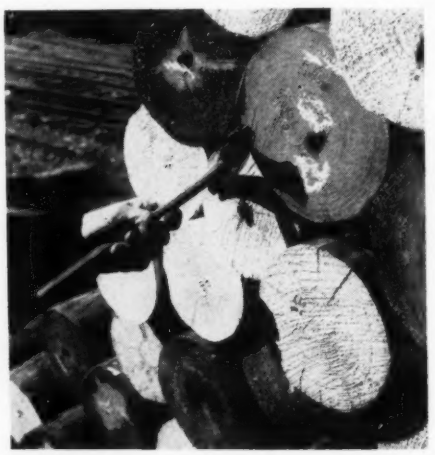
Because it is a multi-million dollar business that depends upon turning out quality products for its many customers, wood preserving plant owners welcome inspection of untreated as well as treated materials.

While plants maintain their own well-qualified employes who have had extensive experience in treating poles and cross arms and who are competent to evaluate the final result, it is in line with good purchasing practices that telephone companies prefer formal, independent inspection of the poles and crossarms which they purchase. Intelligent inspection of treated poles and crossarms assure the users of long life for their plants and likewise protects the reputation of the treater.

Among the reasons for independent inspection are that treaters supply many customers, whose requirements for preservatives and treatments as well as their fabrication requirements such as boring, framing, grading, etc., vary. To satisfy these different requests, the treating industry often purchases untreated lumber from widely scattered lumber sources.

On the other hand, many customers are separated from their treating plant suppliers by hundreds of miles and freight involved represents a major portion of the delivered costs.

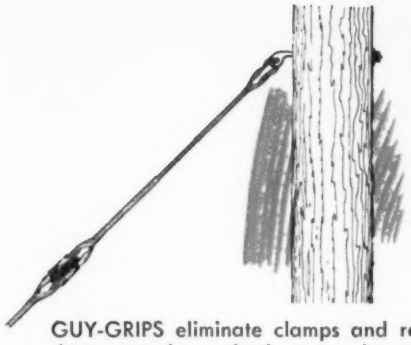
Lindsay Talley, inspector for Southwestern Laboratories, Fort Worth, Tex., measures length of a pole prior to its being pressure-treated by the W. J. Smith Wood Preserving Co., Denison, Tex. Required dimensions of poles are governed by the strength characteristics of the particular species of wood and the job required in the line. The class of a pole, another method of expressing dimension, is defined in tables of the American Standards Association.



Inspector's brand, in this case Southwestern Laboratories, goes on a pole after inspection.

Lindsay Talley takes a sample of penta preservative from W. J. Smith Wood Preserving Co., cylinder to check on the amount of penta in the penta-and-oil treating solution.

An inspection agency for western woods in the Northwest is Gross Inspection Agency of Seattle, Wash. Here, Joseph Beard takes a boring for analysis in these large Douglas fir poles at the McCormick & Baxter Creosoting plant, Portland, Ore.



GUY-GRIPS eliminate clamps and reduce strand required . . . do not slip! Tests prove that even extra high-strength steel strand breaks outside the Guy-Grip when subjected to impact, repeated load or gradual tension. Save 50% installation time.

FOR "C" RURAL

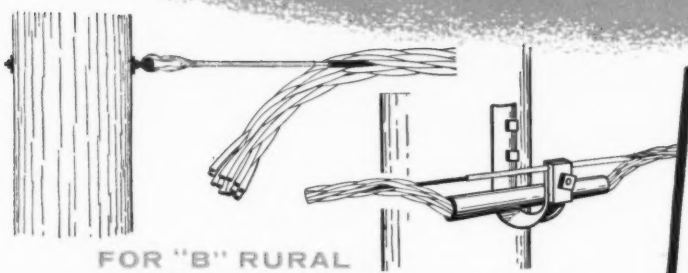
TANGENT SUPPORTS AND DEAD-ENDS

Made of stainless steel for corrosion resistance, these Preformed Tangent Supports and Dead-Ends are coated with Neoprene to cushion their grip and uniformly distribute holding pressure. Designed for 2 - #14 or 2 - #12 "C" Rural conductors, they assure a low radial pressure over the entire holding area and prevent slipping, thus eliminating a major cause of resagging. Note multiple-wire bail of Dead-End.

for the Telephone Industry . . .

PREFORMED PRODUCTS

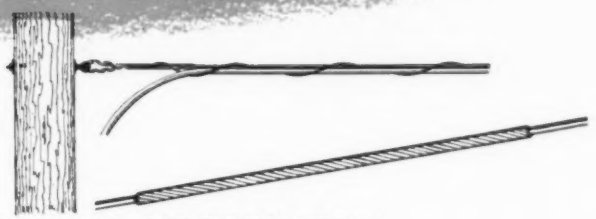
Used and praised by a growing list of leading Telephone Companies, Preformed Products are the result of *progressive* ideas backed by *extensive research* and *sound engineering* insuring the ultimate in *field performance. Ask your Telephone Supplier for complete details of their exclusive advantages.*



FOR "B" RURAL

PREFORMED DEAD-ENDS are the easiest-to-install, non-slip answer to dead-ending. Can be installed without cutting messenger.

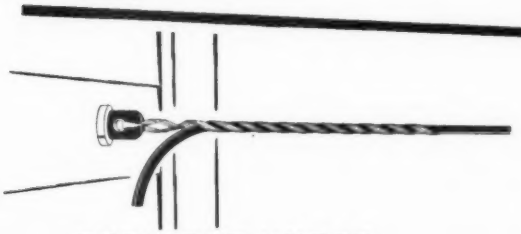
PREFORMED ARMOR RODS protect insulated messengers against clamping pressure or abrasion damage.



FOR ALL MESSENGERS

PREFORMED DEAD-ENDS AND SPLICES are the surest, safest and non-slip means of splicing and dead-ending all sizes of messengers. Easy to install . . . no tools required.

PREFORMED LASHING RODS, individual Preformed Rods designed to lash cables to messengers require no clamps. Neat. Easy to install. No tools needed. Can be removed and reused.



FOR DROP-WIRES

DROP-WIRE DEAD-ENDS of stainless steel . . . Neoprene coated . . . cushion the grip; eliminate abrading or cutting through insulation; provide low radial pressure over the entire holding area . . . no damaging concentrated pressures. No slippage or cold flow. Multiple-wire bail prevents fatigue failure.

FOR SELF-SUPPORTING CABLE

PREFORMED DEAD-ENDS AND LINE GUARDS with their large-area, uniform, low-pressure contact surfaces are the only devices in their classification that can be used safely with plastic-covered multiple cable. They were specially designed upon request for this use.

Made in accordance with or for use under one or more of the following U.S. Patents: 2,275,019; 2,587,521; 2,609,653; 2,691,865; other patents pending.

PREFORMED LINE PRODUCTS COMPANY

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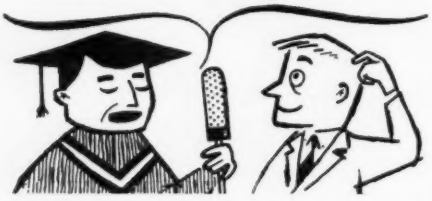
QUESTION—
which of these CROSSBAR benefits means most to you?



Maximum expansion—*Kellogg Crossbar switching equipment can grow from 10 to 10,000 lines.*

Lower installation costs—*No soldering or wiring is required. The Crossbar comes to you ready to plug in.*

Minimum maintenance costs—*Due to the unique construction of the Crossbar, routine maintenance is practically eliminated.*

Convenience—*Drawer-mounted switches pull out for easy inspection.*

High traffic capacity—*Multiple paths allow 10 to 20 calls to be placed simultaneously.*

ANSWER

These are all important advantages, but there are many more cost-saving features of the Kellogg Crossbar that you should know about. Write today for your copy of the Kellogg Crossbar Bulletin.

KELLOGG
A DIVISION OF I T & T

KELLOGG SWITCHBOARD AND SUPPLY CO.
A Division of
International Telephone and Telegraph Corp.
Sales Office: 79 W. Monroe St. Chicago 3, Illinois

Thus, it is important that both treaters and telephone companies know that the product will be accepted before it leaves the treating plant. The services of impartial, independent inspection companies employed at the plant provide this assurance.

Inspection has been emphasized by the users of treated wood since the early 1920's when the American Wood Preservers' Association, an organization composed of treaters and users of treated wood, formulated its first set of specifications and recommended practices. These were assembled in the AWPA Manual of Recommended Practices and are kept up-to-date by AWPA technical committees. Among other things, the manual listed the requirements and duties for inspectors. Soon after, independent inspection agencies organized to provide inspection services to users of treated wood and to supplement the excellent treating plant quality control.

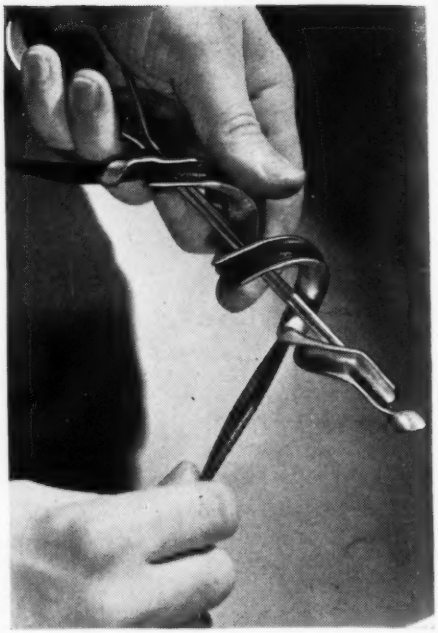
Many such agencies now are functioning throughout the country, and have grown in stature along with the wood preservation industry. Because of the importance placed on the inspection of poles and crossarms and other wood products many larger telephone and utility companies have their own qualified inspectors. Work done by both of these groups is evidenced in the fine experience of the many users with treated wood.

The inspection companies are usually employed by pole users and other customers of the wood treating industry and their men work in the treating plants alongside the plant operators. These inspectors follow the instruction in the AWPA manual or their clients' own specifications which are frequently adapted from AWPA standards.

Inspection includes quality control on all preservatives and treating schedules. From the outset, inspectors have evaluated creosote and creosote-treated materials according to the physical standards set for that preservative by AWPA standards. Pentachlorophenol is also covered in AWPA standards and it can be chemically analyzed and controlled through exact laboratory tests.

Duties of an inspector are many and dictate that he be familiar with specifications of his client or with recognized industry specifications for such products as treated posts, lumber, ties and timbers in addition to poles and crossarms.

Obtaining well-treated, long-lasting wood means a tremendous savings to all users of treated wood. Alert inspection is the tool telephone companies can use to insure a long lived, dependable outside plant.



Wire-Saving Snubbing Action . . . with this

KEARNEY

SNUB-R-GRIP DROP WIRE GRIP

On poles or buildings this free-swinging drop wire tie provides a "snubbing" action stronger than the rated strength of the wire. This is possible because the unique spiral grip distributes the pull over a long length of wire. KEARNEY Snub-R-Grips are quickly installed and easily salvaged. Just wrap the wire (twisted pair, parallel or synthetic-jacketed) into the grooved spiral. A portion of the groove's inner surface is specially coated to give maximum non-slip grip . . . without damage to insulation.

For Better Construction . . . Safer Maintenance

Specify 268

KEARNEY PRODUCTS
4224-42 Clayton Ave. • St. Louis 10, Mo.
Canadian Plant: Guelph, Ontario

IT&T President Announces Executive Changes

The following three executive changes at International Telephone & Telegraph Corp. were announced on June 4 by Edmond H. Leavey, president:

Charles D. Hilles Jr., vice president, former general attorney and more recently in charge of IT&T's telephone and radio operating department, has been appointed executive vice president.

C. D. HILLES, JR.

H. G BUSIGNIES

Henri G. Busignies, executive vice president of Federal Telecommunication Laboratories, U. S. research organization of IT&T, has been appointed president of that division.

Henry H. Scudder, vice president of International Standard Electric Corp., IT&T's holding and management unit for its manufacturing and research facilities overseas, has been advanced to executive vice president of that company.

THIS NEW
CHANCE
TELESCOPING TRIP AUGER
DIGS HOLES 20% FASTER

Here's a completely new, ruggedly built earth auger —especially designed for line work.

Due to the particular design of its fast cutting, high strength blades our linemen were able to dig holes 20% faster with this new auger than with the previous model.

The handle telescopes for digging deep holes. Extension rod locks at 6-inch intervals. The reamer blade can be expanded and set to bore nine sizes of holes with the same auger. A smooth working trip mechanism opens the movable blade to make dirt dumping easy.

Five models are available for digging holes from 6½ to 14⅜ inches in diameter, and from 8 to 12 feet deep.

Consult pages 6-9 in your Chance Catalog —or ask your Chance Distributor to show you this new auger.

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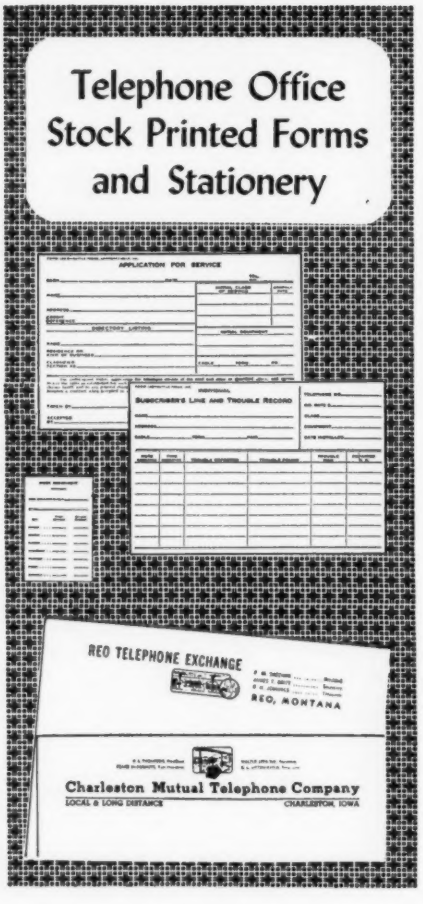

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LAWRENCEVILLE ILLINOIS

H. H. SCUDDER

Mr. Hilles, a native of Lancaster, O., is a graduate of the Yale School of Law. From 1928 to 1941 he was associated with the firm of Root, Clark, Buckner & Ballantine, of New York, and, with the firm's leave, served on the legal staffs of the French and British Purchasing Commissions. He joined IT&T as assistant secretary and assistant general attorney in 1941, and a year later was named secretary. Mr. Hilles was elected a vice president and director of the corporation in 1944 and 1946, respectively; and in 1952 became its general attorney.

IT&T granted Mr. Hilles a leave of absence in April 1954, to permit him to serve as special legal counsel to the United States High Commissioner for Germany. His service there was for 18 months, and upon his return he became vice president in charge of IT&T's telephone and radio operating department, the position he held at the time of his latest advancement.

Mr. Busignies is a veteran of 28 years of IT&T service. Joining the Paris laboratories in 1928 as an electrical engineer, he spent the next 12 years on research and development of direction finders, instrument landing systems and early radar design. He came to the United States in 1941 and was one of the organizers of the Federal laboratories. He advanced from senior engineer through the posts of technical director, vice president and member of the management advisory board, and executive vice president to the position he now holds. Mr. Busignies is an authority on radio and electronic aids to aerial navigation, and during World War II developed the shore-based direction finding system known as "Huff Duff," which proved a vital factor in the war on enemy submarines. He holds more than 100 patents in the aerial navigation, radar and communications field.

Mr. Scudder's career, after graduating from Yale University in 1917, has been almost entirely with IT&T. He was with IT&T's French associate, Le Materiel Telephonique, until 1930 and later served with IT&T System companies in Italy, Argentina and the United States. He was appointed executive assistant to the vice president and chief engineer of IT&T in New York in 1946, vice president of ISE in 1951 and became a member of its board of directors the following year.

Mr. Scudder was in the Armed Forces during both World Wars. In the first conflict he was in the Field Artillery, and during World War II, attained the rank of colonel in the Signal Corps serving in the Mediterranean area. He was Chief of Communications for the Allied Commission in Italy until his return to IT&T in 1946.

Direct Radio-Telephone Connects Calcutta, London

Direct radio-telephone services between Calcutta and London were inaugurated with the opening of a new oversea communications center, consisting of a transmitting station at Halisahar, 35 miles east of Calcutta, and a receiving station at Hatikanda, near Haringhata, it was announced recently.

The new center is part of a plan to disperse oversea communications services in India over four different zones —Bombay, New Delhi, Calcutta, and Madras. Previously all oversea communications were routed through Bombay.

Both transmitting and receiving stations are equipped with the latest type equipment, which will permit radiotelephone service between India and the United States, Australia, Thailand, and several other countries.

No Horn of Plenty

"A good thing to remember in these days of all kinds of 'federal aids' is that the federal government hasn't got a dime that it doesn't take away from the people. So it can't give anything to a school system, building programs, county welfare, flood control, crop surpluses or anything else without first having taken it away from the people." —*Abilene (Kan.) Daily Reflector Chronicle.*

Less Federal Government

"We have too many local governments and not enough local governing." —MEYER KESTNBAUM, *special assistant to President Eisenhower on intergovernmental relations.*

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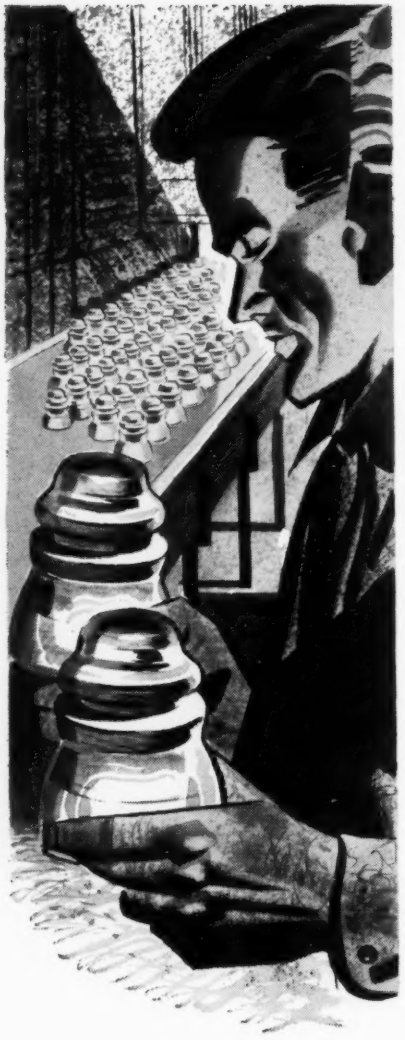

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ILLINOIS HOLDS 51st CONVENTION

Continued from page 28

ability to earn its bond interest at least two times, after accrual of depreciation charges and income taxes and earn its entire debt service, including the sinking fund requirements, at least 1½ times.

"Before you can erect any kind of a credit structure, you must have an equity base and, if the equity base is insufficient for the credit involved, additional net worth must be obtained. Whether a commercial bank is making an interim loan, or an insurance company is making a permanent investment, the requirement is generally the same that such additional equity as may be required must be on hand or firmly committed for.

"In the case of a closely held corporation with stockholders of ample means, there should not be any great problem. If there are a fair number of stockholders, say, something over 100, but still not a large enough number to justify an underwriting, the equity may be raised on a rights basis which is to say that the stockholders are offered rights to buy additional stock in a predetermined proportion to their present stock ownership. In any case, as soon as the construction budget is crystallized, the question of additional equity must be anticipated."

One of the most vital requirements for securing adequate financing is sound management, Mr. Murray stated. He continued:

"Probably the first subject on which a bank, insurance company, or potential stockholder will want to be informed is on management. What is its record, its qualifications and experience and general standing and reputation among its contemporaries in the business? Has provision been made for replacements? Are people in training for the executive jobs? Of course, we know that the small company cannot have as elaborate a setup either in breadth of talent or in depth of organization as the larger companies, but, nevertheless, management is always going to be the most important single consideration."

In an address entitled, "Let's Keep Our Business and Politics Straight," R. C. Reno, editor of TELEPHONY, warned his listeners that public utilities, including telephone companies, are vulnerable to political attack because they have failed to acquaint the public with their role as government-regulated "natural monopolies."

Stating that this monopoly feature of public utilities gives rise to public misunderstanding, the speaker stated:

"It is the duty of public utility management to develop a better public knowledge of such matters.

"Too many customers are unaware that public utilities, such as telephone, power and gas companies, function only under strict government regulation, or that they enjoy the monopoly of certain areas only because the government has authorized it to prevent waste and duplication of facilities.

"Great masses of the public do not realize that state and federal government regulatory bodies exist for the protection of the consumer by fixing monthly rates which utilities may charge, as well as in other ways."

He warned that if public utilities fail to make these facts known to the public they could become prime targets for "unthinking, uninformed and self-seeking candidates" during the 1956 election campaigns.

"Public utilities should not abandon their traditional role as strict political neutrals," he emphasized. "Nevertheless, I very much fear that they may be dragged in to serve as political footballs in local, state or national elections and they should be prepared to uphold the regulation system under which they operate."

Business and industry, in general, carry on exhaustive and constant research to improve their products and the machinery and materials to produce them, but give far too little attention to the most essential factor in the success of business—the people who operate and produce it, Prof. Frank Beach of the College of Commerce and Business Administration at the University of Illinois, declared in an address on "The First Fundamental—Sell Yourself."

Professor Beach urged telephone companies to give time and effort to help their employes to improve themselves and become more productive. This is essential if a company is going to carry out its responsibilities, to progress and perhaps stay in business, he said.

Three members of the Illinois convention ladies luncheon committee. Right to left: Mrs. J. F. Van de Vusse of Bloomington, chairman; Mrs. D. E. La Master of Springfield and Mrs. Virgil Gordon of El Paso, Ill.

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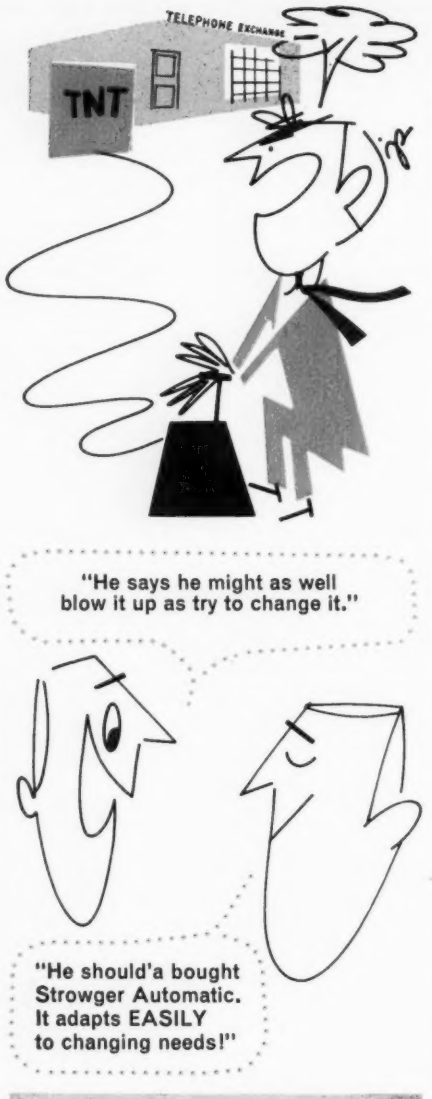
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ORIGINATORS OF THE DIAL TELEPHONE

GENERAL TELEPHONE SYSTEM

INDEPENDENT

With this general introduction, Professor Beach, who is a feature speaker at many sales conferences, emphasized the importance of helping those who sell a company's products and services improve themselves as, after all, they ARE their company when they are out selling.

For a salesman to successfully sell his company's products he must first sell himself, Professor Beach said. There are certain personal characteristics which a salesman must consider if he is to attract and maintain the prospective buyer's interest in the company and products he is trying to sell, the speaker pointed out. Among these he listed the following:

(1) He must see that his personal appearance is such that will be pleasing to his prospect.

(2) His behavior in interviews with his prospects must be beyond reproach.

(3) He must know how to converse with other people. He must have a conversational personality, most important in which is the ability to be a good listener as well as a talker. He must think and talk in terms of others' interests.

Professor Beach termed all salesmen as "D-Men" in distribution. To be a good "D-Man" he said a salesman should have several characteristics, among which are the following:

(1) He must be a "detail" man, because "little things" might turn a sale —many sales have been lost because a salesman did not take care of a few details in which the buyer showed interest.

(2) He must discipline himself to do the things he knows he should do—in other words, he must have a dependable conscience.

(3) He must have the willingness and ability "to dream" about the work of selling—thinking up sound and practical ways to make future sales.

(4) He must have a sincere devotion for his company and industry and a deep loyalty to them at all times.

(5) Above all, he must be a defender of democracy and of the American Way of Life under the private enterprise philosophy.

Speaking of public relations in business generally, Professor Beach said that in his opinion, the telephone industry has done an outstanding job of selling itself and of improving its public relations during the past several years and he urged the industry to increase its efforts along these lines.

"Looking Ahead In Telephony" was the subject of an address by R. Karl Honaman, director of publication of Bell Telephone Laboratories.

"A new era in telephony lies ahead. This is sparked in large measure by advances in electronics. The transistor, invented at Bell Telephone Laboratories just after World War II, will be playing a large part in the revolutionary developments which are coming to better serve the telephone-using public. The beginning of the electronic era arrived just 50 years ago when the vacuum tube was invented. It has made possible the transmission of speech over long distances. While the vacuum tube has contributed greatly to the development of communications, it is an efficient device and has been restricted in its applications to telephony because of economic limitations," Mr. Honaman said. He continued:

"The transistor and a number of other electrical circuit devices born of the same research into the fundamental nature of solid matter, shares with the vacuum tube a characteristic of great importance—that is, high speed of operation, but it also has a much greater efficiency, operating on very small amounts of power.

"Because of the high speed of operation and high efficiency, the new electronic devices now offer possibilities of improvements in telephone transmission but also of important advances in the switching of calls. Telephone relays, the workhorses of switching systems, are efficient devices but they require too much time to operate—a few thousandths of a second. The transistor, on the other hand, can operate in a few millionths of a second.

"A new switching system, using these electronic devices, is well along in its development and within a couple of years, it is planned to make the first trial installation of this new electronic system for switching at Morris, Ill.

"Because the transistor and its family of related electronic components are small, it is expected they will occupy less space than is now needed to house the equipment to make telephone connections. Because these electronic devices work very fast, fewer of them will be needed to perform the required functions and this too will reduce the space required to house this equipment.

"A newly developed system, using transistors, is also making it possible to reach more subscribers in rural areas. Because of the small size and low power requirements, the equipment on rural lines can be mounted on poles and perform functions which, in the past, vacuum tubes were too uneconomical to perform."

The final speaker of the convention was Clayton Rand, editor of *The Dixie Press* and *The Dixie Guide* of Gulfport, Miss.

Mrs. Esther Boyd of the Milledgeville (Ill.) Mutual Telephone Co. welcomed delegates to the Traffic Conference, held during the Illinois convention.

Taking part in the conference program were: Miss Thurley Barnwell of the Illinois Bell Telephone Co.; Mrs. Estherbelle McLennan of the Dixon Home Telephone Co.; Mrs. Mary McWilliams of the Illinois Consolidated Telephone Co., Mattoon; Harry King

of the General Telephone Co. of Illinois, and Mrs. Naomi Brighton of the Illinois Bell Telephone Co.

The convention re-elected the following directors: Ray J. Alter of Galesburg; Harry H. Bates of Dixon (since deceased); Donaldson Coombes of St. Louis, Mo.; W. C. Drysdale of Rantoul, and M. A. Kugler of Okawville.

Other directors elected were Donald Anderson of Geneseo, to succeed R. B. Still of Bloomington, resigned; K. L. Schroeder of Freeport to succeed J. I. Kennedy of Freeport, resigned, and Roland Schmidt of St. Jacobs to succeed C. E. Frey of Troy.

The directors elected the following officers: President, Mr. Kugler; vice president, W. R. McGrew of Park Ridge; treasurer, Mr. Alter; secretary, J. G. Hardy of Springfield, and general counsel, Ben B. Boynton of Springfield.

Complete Stromberg Course As Microwave Specialists

Earl G. Browell, Murt A. Shea, Joseph O. Fordham and Eliott H. Otterbacher have completed a special training program as Stromberg-Carlson carrier/microwave specialists under the direction of Marion C. Royalty, chief sales engineer of that department, and have now located in their respective Stromberg-Carlson branch offices.

Mr. Browell will make his headquarters at the Kansas City office, serving as carrier/microwave consultant in the states of Texas, Louisiana, New Mexico, Arkansas, Oklahoma, Missouri, Kansas, Nebraska, Colorado and Wyoming. He formerly was telephone sales representative in western Texas and New Mexico. Born in Regina, Canada, Mr. Browell received his B.S.E.E. at the University of Manitoba. His first position was with the United Light & Power Service Co., of Davenport, Iowa. Later he was an instructor in electronics at the University of Iowa. In 1943 he moved to Schenectady, N. Y., as a radar design engineer for the General Electric Co. Mr. Browell joined Stromberg-Carlson in 1946 as carrier design engineer, and worked in that field until his telephone sales assignment in 1950.

Mr. Shea will use the Chicago office as headquarters for serving North and South Dakota, Minnesota, Wisconsin, Iowa, Illinois, Indiana, Michigan, Kentucky and western Tennessee. He attended DePaul University and the University of Illinois, and was employed by the Automatic Electric Co. from 1937 to 1942, and from 1946 to 1951. During World War II he served in the U. S. Army Signal Corps in the

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European Theater. From 1951 until he joined Stromberg-Carlson in October 1955, he was an engineer for the firm of Carl C. Crane Co., Inc., Madison, Wis.

Mr. Fordham will serve the West Coast area, with headquarters in Stromberg-Carlson's San Francisco office. His territory will include the states of California, Nevada, Utah, Arizona, Washington, Oregon, Idaho and Montana, and the Territory of Alaska. He joined Stromberg-Carlson early this year, after having served for about three years as plant superintendent of the Elyria (O.) Telephone Co. Previously, he had served in the U. S. Army Signal Corps where he received intensive training in carrier-repeater operations. Later he was chief switchman for the Union Telephone Co., Owosso, Mich., and plant supervisor of the Citizens Utilities Co. at Redding, Calif.

Mr. Otterbacher will work out of the Atlanta office, covering the states of Virginia, North and South Carolina, Georgia, Florida, Alabama, Mississippi and eastern Tennessee. He is a graduate of the University of Michigan, holding degrees in both electrical and mechanical engineering. After service in the U. S. Navy from 1941 to 1946, Mr. Otterbacher worked for the Federal Telephone & Radio Corp. for about three years. He joined Stromberg-Carlson in the fall of 1949, and worked as an apparatus engineer and a production engineer until he was given his present assignment in January of this year.

Superior Cable Corp. Names Industrial Sales Manager

Don W. Hoffman has joined Superior Cable Corp., Hickory, N. C., as industrial sales manager, James H. Bowman, sales manager of the company, announced on June 5.

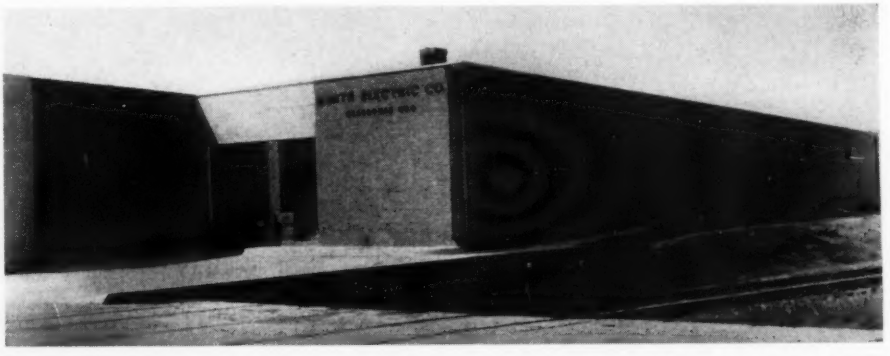
D. W. HOFFMAN

Mr. Hoffman will be responsible for sales to manufacturing plants and railroads and will assist the sales operation in the telephone industry.

His experience in the electrical field includes the use of wire and cable. He served in the U. S. Army Ordnance Department for four years and later owned an electrical contracting business. In 1948, he joined the Westinghouse Electric Supply Co. as a salesman handling apparatus and supplies sales, and from this position, he came to Superior Cable Corp.

Everyday Living

"We are apt to mistake our vocation by looking out of the way for occasions to exercise great and rare virtues, and by stepping over the ordinary ones that lie directly in the road before us."—HANNAH MORE.



North Electric Co.'s new Dallas warehouse was opened on May 21 at 1725 Levee St. The newly enlarged outlet houses the entire personnel and inventory of the Texas facility, says R. B. Wiseman, North's telephone division manager, and it will serve as North's sales headquarters and line supply distribution center for Texas, Arizona, Arkansas, Oklahoma, Louisiana and New Mexico. K. J. Paul is regional manager for North in this area, and sales engineers are E. W. Cross, C. C. Browne and M. C. Meadows. The warehouse manager is John Boyd. The new warehouse retains the designation of North Warehouse No. 4, and the telephone number remains: Prospect 2826.

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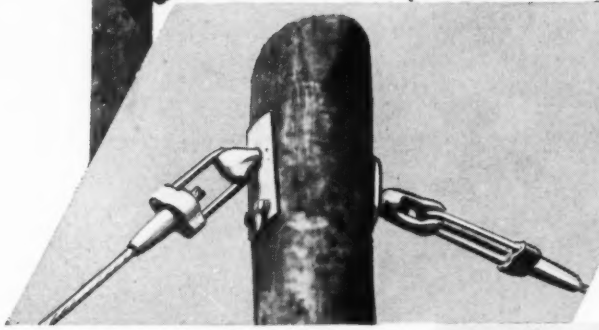

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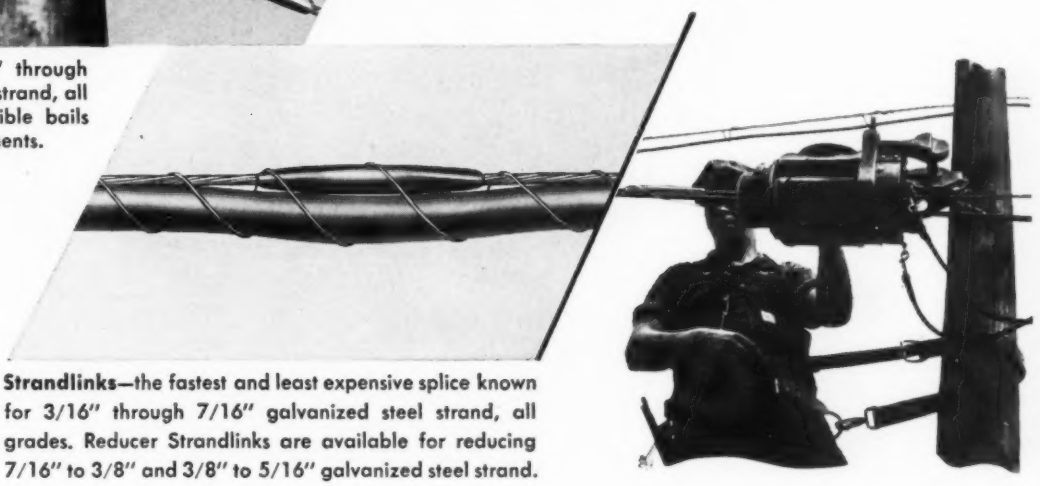

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